In the United States Court of Claims

No. 50403

(Decided January 11, 1955)

RUSSELL H. WILLIAMS, d/b/a WILLIAMS EQUIPMENT CO., AND REED & MARTIN, INC., A CORPORATION v. THE UNITED STATES

Mr. William H. Ferguson for the plaintiffs. *Mr. Donald McL. Davidson* was on the briefs.

Mr. Kendall M. Barnes, with whom was *Mr. Assistant Attorney General Warren E. Burger*, for the defendant.

OPINION

JONES, *Chief Judge*, delivered the opinion of the court:

This case involves a contract between the plaintiffs and the defendant for the construction of a paved road at Fairbanks, Alaska. The facts have been set out in detail in our findings and will be referred to only to the extent necessary for an understanding of the issues which gave rise to the suit.

The principal issue has to do with the amount of borrow material which was excavated by the plaintiffs and put in place on the road. The contract provided for payment for the borrow material at $1.29 per cubic yard and the payment for hauling the material beyond a certain distance at a unit price of 32 cents per cubic-yard mile. The borrow material yardage to be paid for was to be measured in its original position in the borrow pit, which yardage was to be computed by the average end area method, and the overhaul item was to be paid upon the measurement of material in its original position times the overhaul distance in miles and fractions thereof. In other words, an important consideration in determining the amount due the plaintiffs was a determination of the amount of borrow material in its original position.

The face of the quarry rose from a flat surface at a steep, though not vertical, angle. The average end area method contemplated that surveys be made of the vertical profile of the quarry at frequent intervals along its face, both at the beginning and at the end of the quarrying operations. The extent to which the profile upon final survey had receded from its original position would then be the basis for measuring the amount of material that had been removed from the quarry. At or about the time the plaintiffs began work a survey was made of the quarry. After some 30 or 40 percent of the excavation work had been completed, a slide occurred at the quarry in which a large amount of material moved downward and outward toward the base line where the plaintiffs were operating. The amount of material moved was estimated by a witness for the defendant as from 30,000 to 50,000 cubic yards, and by witnesses for the plaintiffs as from 200,000 to 400,000 cubic yards. A fair statement from the evidence would be that defendant's witness was too conservative and the estimates of plaintiffs' witnesses excessive. Whatever may be the correct amount, when we consider that the total amount of material moved, as computed by plaintiffs, was 99,592 cubic yards and that 34,596 had been removed at the time of the slide, the possible effect of such a slide on the computation of material in place by the average end area method can be seen.[1] Not only did material come into the area from

[1] The slide created several difficulties in applying this method of measurement. A considerable part of the material which had broken loose as a result of the slide was still on the face of the quarry at the time of the final survey. In fact, in certain parts of the quarry the final survey profiles indicated that the face of the cliff had expanded over the original profile lines. The slide material, as a result of having been dislodged from its original position, had expanded considerably beyond the volume it occupied in the original position. This expansion tended to make the profile lines of the final survey appear to have receded less than they would otherwise have done. To the extent, therefore, that such slide material was still on the face of the quarry the end area method tended to understate the net volume of material in place actually removed from the face of the quarry by the plaintiffs. The slide also created fissures, some of which had the effect of moving the face of the quarry forward beyond the point where it would otherwise have been. This again tended to understate the amount of material removed by plaintiffs when using the end area method. The defendant made no corrections for these factors in its computations.

Furthermore, the slide carried substantial amounts of material from parts of the quarry that had not originally been surveyed into parts where the plaintiffs' quarrying operations were going forward. It became necessary, therefore, to find out the original profile of the unsurveyed parts of the quarry. This could be done only by use of interpolations from those parts of the quarry

outside for which no cross section had been prepared, but also certain points on the original survey were wiped out.

After the contract was completed the contracting officer caused a final survey to be made and on a comparison of that survey with the original survey computed the borrow material excavated as 69,349.7 cubic yards. During the course of the contract plaintiffs had been paid for this item on a truck-measurement basis, on which basis the borrow material removed had been computed at 99,592 cubic yards, that is, some 30,000 more than the contracting officer computed on the average end area method. The plaintiffs took an appeal from that decision of the contracting officer to the Commissioner of Roads for Alaska, the designated representative of the head of the department, who affirmed the decision of the contracting officer. This suit followed.

When this case was tried and when a report thereon was filed by the commissioner, the last word on the question of the finality of the decision of the head of the department had been stated by the Supreme Court in *United States* v. *Wunderlich*, 342 U. S. 98, in which the Court said that a decision made by the head of the department under the "Disputes" clause of a government contract was final and conclusive unless fraud on his part was alleged and proved. The commissioner found that fraud, as measured by the formula set out by the Supreme Court in that decision, had not been established by the plaintiffs. However, after the report had been filed, the Congress passed and the President signed Public Law 356, 83d Congress, 2d Session, which provided that the decision of the head of any department or agency in any contractual dispute shall not be final and conclusive where "the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith, or is not supported by substantial evidence."

We are satisfied from the evidence and have found as a fact that the decision of the head of the department was not supported by substantial evidence. In reaching this conclusion we have considered the evidence on both sides in order to determine whether it appears that the evidence in support of the administrative decision can fairly be said to

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which had been surveyed at the beginning, a process which tended to create some inaccuracies.

be substantial in the face of opposing evidence. See *Willapoint Oysters* v. *Ewing*, 174 F. 2d 676, certiorari denied 338 U. S. 860. In a recent decision by the Supreme Court, *Universal Camera Corp* v. *National Labor Relations Board*, 340 U. S. 474, 487, the Court made the following statement with respect to the rule relating to substantiality of evidence to support an administrative decision:

> Whether or not it was ever permissible for courts to determine the substantiality of evidence supporting a Labor Board decision merely on the basis of evidence which in and of itself justified it, without taking into account contradictory evidence or evidence from which conflicting inferences could be drawn, the new legislation [Administrative Procedures Act and Taft-Hartley Act] definitively precludes such a theory of review and bars its practice. The substantiality of evidence must take into account whatever in the record fairly detracts from its weight. This is clearly the significance of the requirement in both statutes that courts consider the whole record.

The fact that there is evidence, considered of and by itself, to support the administrative decision is not sufficient where there is opposing evidence so substantial in character as to detract from its weight and render it less than substantial on the record as a whole.

As we view the evidence, it is difficult to see how it could be said that there was substantial evidence to support the decision made by the contracting officer and the head of the department in the face of the opposing evidence. What these administrative officials tried to do was to compute the amount of borrow material removed by the use of a method which had been made impossible of accurate application because of the slide which had occurred. It is true that the contract provided for the use of this method but only as a means of determining the amount of material removed for which the plaintiffs were to be paid. The real question was how much material had been removed. Not only were some of the original survey elevations wiped out but also substantial amounts of material came from outside into the area where the plaintiffs were working and from which material had been removed. These factors contributed to errors in comparing the original survey with the final survey for the

purpose of a comparison of the material removed. Defendant recognized some of these difficulties and undertook through interpolations or estimates to supply the original survey elevations which were wiped out, and otherwise compensate for the changed conditions. That it did not do so in a satisfactory manner is plainly evident from the opposing evidence which was before the administrative officials when the final decision was made and which they contend confirmed the original decision.

In the first place, when the plaintiffs complained of the decision of the contracting officer, the possibility of error was recognized and an effort made to check that computation. The first method used was to have a mass diagram prepared of material in place on the road.[2] Then a computation was prepared which would show the amount of borrow material in place in its original position in the quarry which would be required to produce the material in place on the road as shown by the mass diagram. This computation resulted in a determination of 66,566.5 cubic yards of borrow material as compared with 64,735.9 cubic yards used in the contracting officer's determination for roadway embankment (69,349.7 less 4,613.8, which represented material rejected in spoils pile at the quarry and overburden). While the amount so computed was not substantially greater than the amount computed by the contracting officer, it failed to take into account, as shown by finding 25, substantial amounts of material which were used and for which the plaintiffs were entitled to be paid. With these omitted amounts added to the 66,566.5 cubic yards which were computed, the amount becomes substantially greater than that allowed in the final determination.

A second check on the accuracy of the average end area method was made while the appeal was pending through what is known as a specific gravity test. By such a test it was expected that a determination could be made of a change

[2] This diagram was evidently made by comparing the plans of the vertical cross sections before and after the road was built. The road as finished deviated in certain respects from the plans with the result that additional borrow was required over that contemplated on the plans. Furthermore, the new road was built on top of an old road which sank in some places during the construction and thus required additional fill. Neither of these factors was accounted for in the mass diagram.

in volume from a solid rock condition of the material in the quarry to a disturbed condition of the same material in a truck, that is, a determination of the percentage of swells or voids in the material loaded in a truck as compared with the material in a solid condition in the quarry.[3] In spite of the fact that in making the test a 3-ton truck was used instead of a 6-ton or larger truck of the type in use by the plantiffs during their operations, and that the allowance for the swell factor was unfavorable to the plaintiffs, a yardage was computed of 76,000 cubic yards instead of 69,349.7 determined by the contracting officer. We are convinced that with the use of a truck of the proper size and with the swell factor appropriately resolved an even greater disparity would have been shown.

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[3] The specific gravity method used by the defendant consisted of two parts. The first part determined that a 3-ton truck loaded level to the bed of the truck contained 33 percent voids and 67 percent solid rock by volume. The 33 percent figure was arrived at by taking the specific gravity of representative samples of rock and applying this specific gravity to the weight and volume of the load of a 3-ton truck loaded level to the top of its bed. It does not appear, however, that this 33 percent figure was intended to represent the exact increase in the volume of material from its virgin state to its volume loaded on the truck since no account was taken of voids that might occur in the material in the virgin state. Furthermore, the amount of voids in a small 3-ton truck might well be considerably less than the voids in 6-, 7-, or 8-ton trucks which were the types of sizes actually used. The following computation, though not made by defendant's engineers, is significant. Assuming that the total cubic yards of plaintiffs' truck-count figures took into account a uniform swell factor of 25 percent, then the uncorrected volume of material removed amounts to 132,789 cubic yards; if the plaintiffs' truck-count figure used a swell factor of 20 percent, then the uncorrected volume amounts to 124,490 cubic yards. Applying the 33 percent swell factor of the specific gravity test to those figures yields 88,946 and 83,408 cubic yards, respectively.

The other part of the specific gravity method determined the percentage of voids in the heaped load on a truck having a sideboard level capacity of 6.35 cubic yards. The bed of this truck had inside dimensions of 6.6′ x 10.0′ x 2.6′ as compared to 6.5′ x 7.96′ x 1.56′ of the truck that was used in the previous test. The volume of the heap on such a truck was estimated to be ten-eighths of the volume of the heap on a test truck, or ten-eighths of 1.28 cubic yards which equals 1.60 cubic yards. The total load yardage for such a truck in heaped condition was, therefore, 6.35 cubic yards plus 1.60 cubic yards, which equals 7.95 cubic yards. Applying the 33 percent figure computed above, the engineers arrived at an actual volume of rock of 5.33 cubic yards. The defendant's engineers further assumed that such heaped 6.35 cubic yard trucks were credited with actually having hauled seven cubic yards of material in the plaintiffs' truck-count computation. The basis for this assumption is not clear. Dividing 5.33 into 7, the defendant determined that plaintiffs had only excavated 76 percent of the amount with which they were credited under the truck-count method. This percentage was then applied generally to the total cubic yardage which the truck-count method had credited to the plaintiffs, that is, 76 percent of 99,592 cubic yards, which is approximately 76,000 cubic yards.

The third type of evidence before the head of the department when the final decision was made was the truck-measurement basis contended for by the plaintiffs. Prior to the commencement of the hauling operation, defendant's resident engineer and a representative of the plaintiffs measured each of the trucks on the job and calculated the dimensions of their gross load when heaped full. The volume of each truck as measured was reduced by a swell factor to allow for voids in the material in the trucks as compared with the material in its undisturbed state in the quarry. Each load was checked by inspectors of the defendant both upon departure from the borrow pit and on delivery at the road. Monthly progress payments were made to the plaintiffs by the defendant on the basis of these tabulations. The total yardage computed by this method was 99,592 cubic yards. The major objection raised by the defendant to the accuracy of such computation was that sufficient allowance was not made for swells or voids in the material. In our findings we have agreed that some more allowance should be made for voids than was made in that computation but we are satisfied from the evidence that such allowance should be less than that contended for by the defendant and therefore the amount computed on this basis would likewise be substantially more than that allowed by the head of the department.

What we have, therefore, is a situation wherein the head of the department made a determination of an amount of material removed which was substantially less than the amount computed by any one of three other methods. When we consider the inaccuracies which would certainly result from an attempted use of the average end area method under the changed conditions resulting from the slide, it is difficult to see how three other computations, all of which resulted in substantially greater amounts, could be said to give anything approaching a confirmation of the amount determined by the head of the department. The contradictory and conflicting evidence so detracts from the weight of the evidence in support of the decision as to leave it without substantial support. On the contrary we are convinced that the substantial weight of the evidence supports an amount in excess of that allowed by the head of the department. In our find-

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ings we have found that 84,471 cubic yards of borrow material were excavated which is 15,121.3 cubic yards more than that allowed by the defendant. Since the contract price was $1.29 per cubic yard for the excavation of this borrow material, the plaintiffs are entitled to recover $19,506.48 on this item.

Since the amount allowable for the overhaul item varies in direct proportion to the volume of borrow material removed, the cubic-yard miles allowable on this item is 267,727.8 instead of 217,032.4, that is, 50,695.4 cubic-yard miles more than allowed by the defendant. At the contract price of 32 cents per cubic-yard mile, this amounts to $16,222.53, which the plaintiffs are entitled to recover on this item.

The other issue in the case involves questions of law and arises out of an entirely different set of facts from those just discussed. One of the items involved in the contract was the paving of the road with asphalt. In order to do this work, the plaintiffs had considered renting or buying an asphalt plant in the State of Washington. The rental cost of such a plant would have been approximately $10,700. After the job got under way, the plaintiffs learned that there was a plant located at Ladd Air Force Base which was under the jurisdiction of one Major Russell who was responsible for the maintenance of the roads at the Air Force Base. One of the plaintiffs made inquiry of Major Russell as to whether arrangements could be made for the plaintiffs to use the plant. Major Russell suggested that certain roads on the Base needed seal coating and if plaintiffs would do this work they could use the plant on the road job. After certain negotiations during which Major Russell represented that he had been given authority to enter into the agreement, the plaintiffs submitted a written proposal which was accepted by Major Russell as Air Installation Officer, whereby the plaintiffs agreed to seal coat the main paved roads on the base in return for the use of the asphalt plant to produce asphalt for the road job.

Upon the approval of that agreement by Major Russell, the plaintiffs proceeded to carry out their part of the agreement which they did by seal coating some nine or ten miles of roads in a manner satisfactory to the Air Force Base authorities. The value of such work was in excess of $10,000.

In the meantime, Major Russell had forwarded to his superior officer copies of the agreement which he had approved for seal coating of the roads in return for the use of the asphalt plant by the plaintiffs. Shortly after the seal-coating job had been completed but prior to the time when the asphalt plant had been delivered to the plaintiffs, Major Russell's superior officer advised him that there was no authority for such an agreement and that work thereunder should be stopped immediately. Major Russell replied that the work had already been completed and urged that since the plaintiffs had carried out their part of the agreement and since the agreement was in the best interests of the Government, the plaintiffs should be permitted to use the asphalt plant. However, Major Russell's superior officer refused to change his position. Major Russell advised the plaintiffs of his inability to carry out the agreement but suggested that arrangements be made to have the plant borrowed by the Alaska Road Commission and then rented by the Commission to the plaintiffs. Major Russell stated that if this could be arranged he would arrange for payment for the work which had already been done by the plaintiffs at Ladd Field. As a result the asphalt plant was turned over by Major Russell to the Alaska Road Commission which, in turn, made it available to the plaintiffs at a rental figure of $1.30 per ton. In agreeing orally to that rental figure, the plaintiffs relied upon the assurance previously given by Major Russell that they would be paid for the work which they had already performed at Ladd Field.

The plaintiffs used the asphalt plant in paving the roads under their contract. At or about the time the paving was completed, Major Russell advised the paintiffs that payment could not be made by the defendant for the seal-coating work which had been performed by them at Ladd Field. Thereupon the plaintiffs refused to sign a change order prepared by the Alaska Road Commission reducing the unit price of asphalt by $1.30 per ton. However, the contracting officer, in the final settlement under the plaintiffs' contract, directed that the change order be considered a written order changing the specifications and that the rental stipulated therein be deemed to be an equitable adjustment of the contract price.

Upon completion of the contract, it was determined that 7,820.3 tons of asphalt had been actually used and accordingly $10,166.39 was deducted from payments to the plaintiffs. On appeal to the head of the department, the decision of the contracting officer was affirmed. No amount has been paid to the plaintiffs on account of the work which they did at Ladd Field.

What the plaintiffs are suing for is the amount just referred to which was deducted from amounts otherwise due them under the contract involved in this proceeding. No question is raised by the defendant as to the fact that the plaintiffs performed the services or that the services were worth at least the amount now sued for. The sole defense of the defendant is that since Major Russell was not a contracting officer with full authority to bind the Government in the fullest contractual sense, the plaintiffs cannot recover on this item. Surely, compelling reasons would be required to have any court sanction any such inequitable result and we do not think such reasons exist. Whatever might be said with respect to the lack of authority on the part of Major Russell to enter into a binding contract, it is certainy true that the plaintiffs proceeded in an entirely appropriate and proper manner in entering into the agreement and did so only after they were assured by Major Russell that he had authority to do so. Likewise, Major Russell had also proceeded in good faith in the entire matter and had been assured by Washington that such an arrangement would be satisfactory. The roads that were seal coated were wholly within the base where the contracting officer was located. It seems incredible that he did not know all about the agreement and by his inaction ratify it. Certainly he did not repudiate the agreement, and he did not appear as a witness. The plaintiffs carried out their part of the agreement for which the Government received the benefit. We feel that there then arose an implied contract under which the defendant was obligated to pay the value of the services rendered by the plaintiffs. Recovery is accordingly allowable for this item in the amount deducted under the contract, $10,166.39. Cf. *W. H. Armstrong and Company* v. *United States*, 98 C. Cls. 519, 529; *Lewis Joseph Stiers, et al.* v. *United States*, 121 C. Cls. 157,

172; and *Pacific Maritime Association* v. *United States*, 123 C. Cls. 667, 676.

Judgment will accordingly be entered for $19,506.48 for the material item, $16,222.53 for the overhaul item, and $10,166.39 for the asphalt plant item, making a total of $45,895.40.

It is so ordered.

LARAMORE, *Judge;* MADDEN, *Judge;* WHITAKER, *Judge;* and LITTLETON, *Judge*, concur.

FINDINGS OF FACT

The court, having considered the evidence, the report of Commissioner Richard H. Akers, and the briefs and argument of counsel, makes findings of fact as follows:

1. At all times material to this proceeding the plaintiff, Russell H. Williams, was engaged in the contracting business in Alaska as an individual under the name of Williams Equipment Company with his principal place of business in Fairbanks, Alaska. For convenience, that plaintiff will sometimes hereinafter be referred to as "Williams."

At all times material to this proceeding the plaintiff, Reed & Martin, Inc., was an Alaska corporation with its principal place of business in Fairbanks. It was engaged in the contracting business, normally business construction.

2. During the early part of 1950, the plaintiffs entered into a joint venture agreement for the purpose of submitting a bid to the defendant, acting through the Department of the Interior, Alaska Road Commission, for the construction of a highway from Fairbanks to College and a portion of the Steese Highway, a total distance of approximately 5.74 miles. Williams was the manager of the operation and the other plaintiff did not actively participate therein except in connection with the securing of an asphalt mixing plant hereinafter referred to.

3. The plaintiffs were advised on March 16, 1950, by John R. Noyes, Commissioner of Roads for Alaska, that their bid in the total amount of $389,713.10 based upon the estimated quantities set out in the invitation for bids and the unit prices bid by them had been accepted, that the formal contract was being prepared for their signatures, and that that letter would

constitute notice to proceed within 15 calendar days after its receipt.

4. Under date of March 28, 1950, the formal contract covering the work was signed. That contract bore the number 1–arc–4263 and was signed on behalf of the defendant by A. F. Ghiglione, Chief Engineer, Alaska Road Commission, as contracting officer. It provided that the plaintiffs would furnish the materials and perform the work for constructing the highway from Fairbanks to College and a portion of the Steese Highway in consideration of payment of the unit prices set forth in the bid schedule in strict accordance with the specifications, schedules, and drawings specifically designated in the contract. The contract further provided that the work was to be commenced within 15 calendar days after receipt by the contractor of notice to proceed and be completed by October 15, 1950, subject to such extensions as might be authorized under the contract. The work was started at or about the time required, namely, about April 4, 1950, and, as will hereinafter appear, was completed September 30, 1950, and accepted October 9, 1950.

5. The bid schedule, copy of which was annexed to and made part of the contract, read in part as follows:

Item	Estimated quantity	Pay names, with unit bid price written in words (pay name defined on page shown in parentheses)	Unit bid price	Amount bid
		• • • • •		
26 (1)	57,000	Cu. Yds. Unclassified Excavation for Borrow, Case 1, at One dollar and twenty-nine cents per cu. yd. (70, D–3)	$1.29	$73,530
		• • • • •		
28 (2)	187,000	Cu. Yd. Mi. Special Overhaul of Borrow (1,000′ freehaul), at Thirty-two cents per cu. yd. mi. (74, D–3)	.32	59,840
		• • • • •		
140 (1)	8,000	Tons (Class F Pavement, Type F–1) Plant Mixture, Grading A–1, at Twelve dollars and no cents per ton (274)	12.00	96,000
		• • • • •		

6. The contract contained, among other provisions, the following:

> ARTICLE 4. *Changed conditions.*—Should the contractor encounter, or the Government discover, during the progress of the work, subsurface and/or latent conditions at the site materially differing from those shown on the drawings or indicated in the specifications, or

unknown conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the plans and specifications, the attention of the contracting officer shall be called immediately to such conditions before they are disturbed. The contracting officer shall thereupon promptly investigate the conditions, and if he finds that they do so materially differ the contract shall, with the written approval of the head of the department or his duly authorized representative, be modified to provide for any increase or decrease of cost and/or difference in time resulting from such conditions.

ARTICLE 15. *Disputes.*—Except as otherwise specifically provided in this contract, all disputes concerning questions of fact arising under this contract shall be decided by the contracting officer subject to written appeal by the contractor within 30 days to the head of the department concerned or his duly authorized representative, whose decision shall be final and conclusive upon the parties thereto. In the meantime the contractor shall diligently proceed with the work as directed.

ARTICLE 16. *Payments to contractors.*—(a) Unless otherwise provided in the specifications, partial payments will be made as the work progresses at the end of each calendar month, or as soon thereafter as practicable, on estimates made and approved by the contracting officer. In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.

* * * * *

7. Specifications FP–41 issued by the Federal Works Agency, Public Roads Administration, and incorporated in the contract by reference, provided in part as follows:

ITEM 26.—BORROW

DESCRIPTION

26–1.1 This item shall consist of excavating approved material from borrow pits, when sufficient quantities of suitable material are not available from other excavations, and the disposing of all excavated material, all in accordance with these specifications and in conformity with the lines, grades, and dimensions shown on the plans or as directed by the engineer.

26–1.2 Material to be used as topping for embankments, as a cushion for rock embankments, or for reinforcing unsatisfactory subgrade soil or for backfilling

cuts, where excavation below grade is authorized, shall be obtained under this item when satisfactory material for the special purpose is not obtainable from other excavations.

26–1.3 SELECTION OF SOURCES.—Material for this item shall be obtained under the terms of case 1 and/or case 2 described below.

Case 1.—When case 1 is called for in the bid schedule, the sources of borrow material shall be indicated on the plans and/or designated by the engineer, and the contractor shall be relieved of the responsibility of obtaining the right to take the material from such sources.

* * * * *

MATERIALS

26–2.1 Material for this item shall be material selected by the engineer as meeting specifications for the particular embankment or backfill for which the material is intended. The material shall be obtained from the approved borrow sources.

METHOD OF MEASUREMENT

26–4.1 The yardage to be paid for shall be the number of cubic yards of material (including the yardage of overburden stripped from pits) measured in original position and computed by average end area method, excavated and acceptably disposed of in embankment, backfill, or as otherwise ordered, except that when case 2 is called for in the bid schedule, the yardage of overburden stripped from pits (unless used as borrow material) shall not be included in the yardage to be paid for. The measurement shall not include the yardage of any excavation performed prior to the taking of elevations and measurements of the undisturbed ground.

BASIS OF PAYMENT

26–5.1 The yardage, measured as provided above, shall be paid for at the contract unit price per cubic yard for "Unclassified Excavation for Borrow, Case 1," or "Unclassified Excavation for Borrow, Case 2," as the case may be, * * *.

ITEM 28.—SPECIAL OVERHAUL OF BORROW

(Cubic-yard-mile basis)

DESCRIPTION

28–1.1 This item shall consist of authorized hauling in excess of the free haul distance of any material paid

for under BORROW (case 1) and disposed of as required under the various items prescribed for the disposal of such material.

The free haul distance shall be 500 feet or 1,000 feet, whichever is called for in the bid schedule. Only one free haul distance shall be provided in any one contract.

METHOD OF MEASUREMENT

28–4.1 The number of cubic-yard-miles of special overhaul of borrow to be paid for shall be the product of the volume of the overhauled material, measured in its original position, in cubic yards, by the overhaul distance in miles and fractions thereof. The overhauled material shall be the material comprehended within the terms of 1.1 above and hauled as directed more than the free haul distance (as designated in the bid schedule). The overhaul distance shall be the distance between the centers of volume of the overhauled material in its original position and after placing, less the free haul distance (as designated in the bid schedule).

* * * * *

BASIS OF PAYMENT

28–5.1 The cubic-yard miles, determined as provided above, shall be paid for at the contract unit price per cubic-yard mile for "Special Overhaul of Borrow (500 feet free haul)" or "Special Overhaul of Borrow (1,000 feet free haul)," as the case may be, which price and payment shall constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the item.

Under general requirements in the same specifications appeared the following provisions:

Art. 7.14 NO WAIVER OF LEGAL RIGHTS.—The Government shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment therefor from showing the true amount and character of the work performed and materials furnished by the contractor, nor from showing that any such measurement, estimate, or certificate is untrue or is incorrectly made, nor that the work or materials do not in fact conform to the contract. The Government shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith from recovering from the contractor or

his sureties, or both, such damages as it may sustain by reason of his failure to comply with the terms of the contract. Neither the acceptance by the engineer or by his representatives, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the engineer shall operate as a waiver of any portion of the contract or of any power herein reserved, or of any right to damages. A waiver of any breach of the contract shall not be held to be a waiver of any other or subsequent breach.

8. Special provisions which were also made a part of the contract read as follows:

Control of Material

* * * * *

Materials suitable for Borrow, Item 26 (1) may be obtained from the following source:

Deposit B–1

1.5 Mi. from Sta. 73+00± Steese Highway, via Steese Highway and Lazelle Road.

Deposit A–1 is an existing stockpile, therefore, no clearing or stripping will be required.

Deposit B–1 is known locally as the Birch Hill Quarry. The Contractor will be required to secure material from a fresh face. The cost of cleaning an approach to the face, and the cost of any necessary clearing and stripping, shall be considered as included in the unit bid price for Item 26 (1), Unclassified for Borrow.

If it becomes necessary to obtain such material from other sources, allowance will be made for actual net increased haul and will be paid for at the unit price set forth for Item 28 (2) Cu. Yd. Mi., Special Overhaul of Borrow, provided that the quantity shall be determined by truck measurement at point of delivery. The distance shall not be subject to freehaul, but shall be the actual mileage of haul occasioned by the changed location of the material sources as compared to the haul which would have been necessary had all the material been acquired at the designated point. No change in the location of the source of the material shall be made without approval in writing by the Engineer, provided that no reduction in the contract unit price shall be made if consideration of the entire contract undertaking should result in a net decrease in haul.

9. The following "general notes" appeared upon sheet 2 of the contract plans for the highway:

1. Alignment and grades are subject to adjustment.
2. Depths of surfacing, base course and borrow are compacted thicknesses.
3. Curves shall be widened and super-elevated as staked by the Engineer.
4. Approaches shall be constructed to all existing side roads with a minimum width for driveways of 12′. Approach fills shall be constructed with Borrow. Surfacing shall consist of 6″ of Crushed Gravel Base Course. Pipes shall be installed according to the Pipe List on sheet 3 of these Plans.
5. An extra allowance of 1820 cu. yd. of Excavation and 5500 cu. yd. of Borrow has been included in the Estimate of Quantities to cover possible stripping and backfilling of poor material encountered during construction.
6. Deposits for Borrow, Base and Surfacing are shown on sheet No. 1 and described in the Special Provisions.

On the cross-sections for the road an estimated quantity of approximately 51,000 cubic yards of borrow material was shown as required. To that was added the 5,500 cubic yards of borrow set out in note 5 above, and the total amount so arrived at was further increased by a small yardage to make the even figure of 57,000 cubic yards which was shown in the bid schedule as the estimated amount of borrow required for the project. It was also considered that the borrow material under compaction would yield approximately 62,700 cubic yards of embankment. The cross-sections do not show any separate amount computed as required for driveways and intersections. The original survey was deficient in that it had not taken full cognizance of these driveways and intersections.

The pipe list which appeared on sheet 3 of the contract drawings listed 87 different pipe locations, 70 of which required the installation of pipe for the first time, 8 of which required the extension of existing pipe, and 9 of which required the removal of an existing pipe and the placement of a new one. It was estimated that 1,726 linear feet of 15-inch culvert pipe, 30 linear feet of 21-inch culvert pipe, 436 linear feet of 24-inch culvert pipe, and 146 linear feet of

36-inch culvert pipe would be required, of which 30 feet of 21-inch pipe, 14 feet of 24-inch pipe, and 36 feet of 36-inch pipe were for extensions to existing culverts. In carrying out the work, the plaintiffs installed a total of only 69 more linear feet of pipe than were called for on the above pipe list.

10. At the time the contract involved in this proceeding was entered into and carried out, Col. John R. Noyes was Commissioner of Roads for Alaska. Colonel Noyes was graduated from West Point with a degree of Bachelor of Science in 1923, and from Cornell University with a degree of Civil Engineering in 1926. He has been on active duty in the Army since his graduation from West Point and most of his work has been of an engineering nature. During the period 1926 to 1933, he was assigned as an assistant at the Alaska Road Commission. In 1946 he was placed on an interdepartmental committee dealing with Alaskan affairs which later, in 1948, indirectly led to his appointment as Commissioner of Roads for Alaska.

The contracting officer was Angelo F. Ghiglione. He received a bachelor's degree from the University of Washington, and a master's degree from the Massachusetts Institute of Technology—both in civil engineering. Immediately after his graduation he started working permanently for the Alaska Road Commission in 1933 and, except for a period of military service when he was in the Civil Engineering Corps of the Navy from 1941 to 1944, he has been continuously employed by the Alaska Road Commission. He held various positions with the Alaska Road Commission prior to 1947, in which year he was promoted to assistant chief engineer, and in April 1949 to chief engineer. As chief engineer he became the contracting officer on the contract involved in this proceeding. In 1951 he was made Commissioner of Roads for Alaska.

11. In 1948, the road-building program in Alaska expanded greatly. Prior to 1948 appropriations had not been more than $5,000,000 a year. Commencing in 1948, they were about $25,000,000 a year. This was brought about by the adoption of a program for hard surfacing as well as by the extension of the normal work for new construction and maintenance. The Alaska Road Commission had to be ex-

panded very greatly in order to take care of the work. It utilized the services of the United States Bureau of Public Roads very largely in initiating the program. The United States Bureau of Public Roads prepared specifications and supervised the work in a number of cases. The Alaska Road Commission had been building roads in Alaska since 1905, but not paved roads. Since this work had been carried out by its own hired crews and not by contractors, the experience of the Alaska Road Commission with road contracts of the type involved in this proceeding was somewhat limited.

The contract involved in this proceeding was the first contract entered into by the Alaska Road Commission for the construction of a hard-surface road in the Fairbanks district which was to be supervised by that Commission. It had entered into two other contracts for hard-surface roads in that area at or about that time but their supervision was by the Bureau of Public Roads. On June 1, 1949, the Alaska Road Commission had executed a contract for the construction of Haynes Highway, a distance of forty miles, and on March 15, 1950, had executed a contract for the construction of a road three and one-half miles long at or near Anchorage. Both were hard-surface roads and both were under the complete supervision of the Alaska Road Commission. They were outside the Fairbanks district.

12. At the time the contract was entered into, Colonel Noyes recognized the lack of knowledge and experience of the personnel in the Fairbanks area with contracts of the type about to be carried out. The district engineer, Frank Nash, had grown up with the road work in Alaska but he was not adequately informed on a job of that kind. The assistant district engineer, Milton C. Zimmerman, while a well trained engineer with some years experience in Alaska, was likewise inexperienced on a job of this character. Because of this situation, Colonel Noyes gave more than the usual attention to the job. In addition, the Alaska Road Commission obtained for resident engineer James L. Foster, a competent engineer who had had considerable experience in work of the character involved. Because of the weakness in the district office, Foster was granted more authority than was usually given to a resident engineer in carrying out a job of

that kind. Since this was the Commission's first paved road job in the Fairbanks district and one of their first jobs of that kind which was being carried out without assistance from the United States Bureau of Public Roads, he (Noyes) told Foster he was anxious that a good job be done. Noyes also told Foster that in the event he was unable to secure decisions from Nash, he (Foster) should communicate directly with him (Noyes). On two occasions when Williams took up matters with Nash, Nash told Williams that Foster was resident engineer and that matters pertaining to the job should be taken up with him. While Foster was under Nash and Zimmerman, most of the decisions which had to be made on the job with respect to carrying out the work were made by Foster without much assistance from them. However, Foster submitted his reports through the district office and conferred with both Nash and Zimmerman from time to time with respect to the manner in which the work should be carried on.

13. The Birch Hill Quarry which was designated in the contract as the source of borrow material was located approximately one and one-half miles east of the eastern terminal of the road construction on the Steese Highway. The length of the face of the quarry on which the plaintiffs were working was about 650 feet and it had a height of 100 to 125 feet. When the plaintiffs started work, the quarry, which was virgin material not previously excavated, lay on about a 45 percent slope, that is, it rose 45 feet for each 100 feet in the face of the slope. In taking material from the quarry, the lay of the material was changed in substantial part to about a 60 percent slope which was the steepest at which the material would remain in place.

The material was a micaceous schist lying in planes four to six inches in width. The deposit was conic in shape and the plaintiffs were working on one of the sloping faces. The material was not a solid wall of rock, but was laminated and had further disintegrated to some extent by the action of the weather upon it. While the evidence does not clearly establish the extent to which voids may have existed in the virgin material before it was disturbed in the plaintiffs' operation, whatever voids existed, except for broken material on the sur-

face, were smaller in magnitude than the voids in the material after it was removed by the plaintiffs. Small slides, in addition to the major slide hereinafter referred to, occurred from time to time during the operation. The excavation was performed by power shovel which operated from the toe of the slope and loaded the material into trucks. No blasting was required or employed except two small shots to loosen the frozen toe area at the beginning of the operation. The material, loaded as just described, was delivered by the trucks to the road and formed the base course for the road. It was compacted on the road by traffic, including the plaintiffs' vehicles, moving over it during the period of operations and by the use of a caterpillar tractor.

14. No survey had been made of the part of Birch Hill Quarry where the plaintiffs were required to secure the borrow material prior to the execution of the plaintiffs' contract. However, since the contract provided that borrow pit material, referred to in the bid schedule as Item 26 (1), and special overhaul of borrow, Item 28 (2), were to be paid for on the basis of the number of cubic yards of material measured in original position in the quarry and computed by the average end area method, the defendant caused a survey to be made of the quarry immediately before the plaintiffs began excavation work. This survey was done in large part by the stadia method by making profiles of the face of the quarry at 25-foot intervals from an established base line 1,000 feet long and parallel with the main slope of the quarry. There was a relatively flat plane at the top and extending back from the quarry, and the profiles just referred to extended back on this plane for distances ranging from 25 to 50 feet. Since the face of the quarry was irregular, inaccuracies could result by the use of the stadia method under such circumstances. However, this method is often used and is usually found reasonably accurate within a margin of error of 5 percent. The chain method of survey which was used to a relatively small extent takes much longer but produces results accurate within a margin of error of 1 percent.

15. It is customary on contracts of this type, where the final quantity is to be established by cross-sections, to make progress payments on the basis of a measurement of trucks, a

determination of the load carried by each truck including the heap on the truck and swell in the material, and a count of the number of trips made by each truck. Prior to the commencement of the hauling of borrow from the quarry, defendant's resident engineer, James T. Foster, and a representative of the plaintiffs measured each of the trucks on the job and calculated the dimensions of their gross load when heaped full. Each of the trucks was numbered and the number painted on its side. The volume of each truck as measured was reduced by a swell factor to allow for voids in the material in the trucks as compared with the material in its undisturbed state in the quarry. A somewhat larger swell factor was used in the smaller trucks because of the greater compaction of the load in a large truck, the greater likelihood of fine material filling voids that might arise during loading, and the fact that the cab on the larger truck held a larger heap at that end. However, that difference in the factor on the smaller trucks became of relative unimportance on the job for the reason that the so-called smaller trucks, seven cubic yards in capacity or less, were used for only a short time during the operations.

The yardage for each truck, adjusted in the manner indicated above to represent yardage in place, was recorded against the number of each truck. Thereafter, throughout the course of the job, a representative of the resident engineer's office checked each truck that left the borrow pit and listed its number, yardage, and time of departure. Another inspector from the resident engineer's office on the job noted the time of arrival of each truck, yardage, and the place where delivered. A representative of the plaintiffs also checked yardage and placement of the material on the road. These three reports on yardage were reconciled each day and the resident engineer furnished to the plaintiffs a weekly report on the yardage hauled and the yard mile tabulation based upon the method of calculation just described. Monthly progress payments were made to the plaintiffs on the basis of these tabulations. Likewise the plaintiffs paid their hauling subcontractors on the same basis of calculation of yardage.

16. As shown in finding 14, the base line of the quarry for the survey made by defendant was 1,000 feet long and par-

allel with the main slope of the quarry. The plaintiffs' operations in the quarry covered only approximately 650 feet, that is, from station 3+50 to station 10+00. The toe of the slope at station 3+50, which was the eastern limit of the plaintiffs' operations, commenced about 90 feet back from the base line and the toe of the slope at other points between station 3+50 and station 10+00 varied from that distance back of the base line to a close proximity to the base line at stations 8+25 and 8+75 and approximately 50 feet at station 10+00. The power shovel operated at the toe of the slope and toward the steep embankment of the quarry, that is, in a northerly direction. Approximately 92 percent of the material excavated by the plaintiffs during their period of operations came from between stations 6+50 and 9+50.

17. Prior to May 11, 1950, the plaintiffs had excavated and moved from the quarry 34,596 cubic yards of material computed on the truck measurement basis heretofore described. On May 11, 1950, a large slide occurred at the site where excavation work was being carried on by the plaintiffs in the quarry—partially burying the shovel and killing the shovel operator. At the time of the slide, the power shovel was operating about in the area of station 7+00 to station 8+50, that is, from 150 to 300 feet from the western end of the borrow area. A large amount of material moved downward and outward toward the base line where the plaintiffs were operating. The slide covered approximately 500 feet along the face of the slope encompassing the area about between stations 4+75 to 10+00. A large amount of material moved as a result of the slide though no accurate determination of the quantity can be made from the evidence in the record nor was any attempt made to determine the extent of the slide when it occurred. A witness for defendant estimated that not more than 30,000 to 50,000 cubic yards of material were involved in the slide, whereas witnesses for the plaintiffs estimated from 200,000 to 400,000 cubic yards. Cracks, fissures, and crevasses were opened up north of the face of the slope and on the slope itself. The biggest crevasse was immediately above the slide area and was about 50 feet along, 10 feet wide, and at least 20 feet deep. At least some of the cracks, fissures or crevasses were outside

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21. The work on the contract involved in this proceeding was completed on September 30 and formally accepted by the Alaska Road Commission on October 9, 1950. As heretofore shown, the work under Item 26 (1), Unclassified Excavation for Borrow, was completed on or shortly after June 30, 1950.

Foster remained on the job as resident engineer until about September 16, 1950, at which time, because of his own illness or illness in his family or some other reason, he returned to California and did not thereafter return to his job in Alaska. At the time he left, the Alaska Road Commission expected that he would return within a few days and his job was not filled on a permanent basis until some months later when it appeared that he would not return to Alaska. No one else connected with the Alaska Road Commission was as familiar with the work as Foster, and his absence from the job made it more difficult for the Alaska Road Commission to prepare the final estimates and ultimately deal with the controversies involved in this proceeding. However, during the period July to September, the greater part of which time Foster was on the job, the survey referred to in finding 22 was made. What connection Foster had with this final survey does not definitely appear, though in his weekly reports for July 23 and August 6, 1950, there are notations to the effect that the survey was being made.

22. Under the average end area method provided in the contract for computing the amount of borrow material removed, it was contemplated that a survey would be made of the quarry after the excavation was completed for comparison with the original survey. The excavation was completed about June 30, 1950, and during the period July, August, and September, 1950, the office of the Alaska Road Commission at Fairbanks caused such a survey to be made. The same base line was used as in the original survey and cross-sections were prepared, using the same stations as in the original survey, that is, stations 25 feet apart. Since the original survey did not cover the entire area from which material had slid into the quarry, the original profiles were extended by interpolations, under recognized engineering procedure, to cover certain areas not covered by the original survey.

The use of interpolations is subject to certain inaccuracies but usually provides a reasonable degree of accuracy.

The interval between the original survey and the final survey as plotted was used as a basis for computing the material removed from the quarry. No allowance was made for swell or voids in the quarry which may have been created in the material remaining in the quarry by reason of the slide. That computation showed the total amount of borrow material excavated as 68,888.32 cubic yards and the number of cubic-yard miles of special overhaul for borrow as 202,532. On that basis the final estimate was prepared by the resident engineer and approved by the district office of the Alaska Road Commission. This estimate was a reduction in the borrow material item from 99,592 cubic yards, as reported on the truck measurement basis, to 68,888.32, that is, a reduction of 30,703.68 cubic yards which, at the contract price of $1.29 per cubic yard, amounted to a reduction in the amount to be paid to the plaintiffs of $39,607.75. Similarly on the overhaul item, it meant a reduction from 311,570 cubic-yard miles to 202,532, that is, a reduction of 109,038 which, at 32 cents per cubic-yard mile, amounted to a reduction in the amount to be paid to the plaintiffs of $34,892.16.

23. In computing the final yardage of borrow material which had been removed from the quarry by the use of the two surveys, 27 cross-sections taken 25 feet apart were used, that is, from station 3+50 to station 10+00 which was the area where the excavation was carried out. Four of these sections were found wholly negative and six others partly negative. A negative section is one in which the final ground is above the original ground, that is, more material than there was at the start of the excavation. A partly negative section is where some portion of the final ground is above the original ground. The defendant deducted yardage to the extent of the negative and partly negative sections. The following tabulation shows the amount of material computed for each section, including the sections shown as negative or partially negative:

	Station	Cubic yards
	3+50	653.7
	3+75	1,306.9
	4+00	1,519.9
	4+25	1,133.3
	4+50	618.5
Partially Negative	4+75	145.4
Negative	5+00	−12.5
Partially Negative	5+25	−25.5
Negative	5+50	−31.5
Partially Negative	5+75	157.4
Partially Negative	6+00	−29.4
Negative	6+25	417.1
Partially Negative	6+50	1,852.3
	6+75	3,321.8
	7+00	4,613.8
	7+25	5,291.2
	7+50	5,707.4
	7+75	6,289.3
	8+00	6,974
	8+25	7,398.6
	8+50	7,521.7
	8+75	6,116.6
	9+00	4,156.4
	9+25	2,970.4
	9+50	1,605.1
Partially Negative	9+75	−322.2
Negative	10+00	
		69,349.7

The total amount shown above differs from the final estimate referred to in the previous finding by 461.38 cubic yards which represented overburden removed by the plaintiffs but which the Commission did not at first recognize for pay purposes as borrow material. In the final determination, however, the total of 69,349.70 cubic yards was allowed. It was allocated as follows:

64,735.90 cubic yards to roadway embankment.
4,152.42 cubic yards rejected in spoils pile at quarry.
461.38 cubic yards overburden.

24. Shortly prior to November 25, 1950, the district engineer forwarded to the plaintiffs the final estimate referred to in finding 22, and on November 25, 1950, the plaintiffs wrote the district engineer as follows:

This will acknowledge receipt of your final estimate on the College Road job, Contract No. 1–arc–4263.

In checking your quantities shown on the estimate we find that there are great discrepancies between estimate No. 4 and the final quantities.

Since the quantities of previous estimates were determined by load slips, weight slips, cross sections and records which were compiled and maintained by the Resident Engineer who furnished the supervision and control on this job, and in view of the discrepancy between the final quantities and those previously approved we cannot accept this estimate without complete substantiating data used in the compilation of your quantities.

It is impossible for us to understand how such a great discrepancy could be possible on a job with competent administration and control.

We hereby request that the Contractor be furnished complete supporting data including copies of field notes on quarry sections, all preliminary and final sections and other supporting data used in determining the final quantities.

25. Because of their dissatisfaction with the foregoing determination by the district engineer, the plaintiffs took the matter up with the contracting officer. Various conferences and discussions were had with the contracting officer and other representatives of the Alaska Road Commission in connection with which, and other conferences after the decision by the contracting officer, the Alaska Road Commission made available to the plaintiffs and to a consulting engineer retained by them all field books, profiles, and engineering data of the Alaska Road Commission having to do with the project. While these discussions were being had, the contracting officer caused the district engineer to prepare a mass diagram of the material in place on the road and compute the quantity of borrow material in place on the road. This computation resulted in a determination of material in place in the roadway of 66,566.5 cubic yards. The computation was made as a check on the reasonable accuracy of the amount of the borrow material which had been previously determined by the average end area method as used for roadway embankment, namely, 64,735.90 cubic yards. It also afforded a basis of comparison with the estimates of borrow material required as set out in finding 9. For such purposes, it failed

to take into consideration indeterminate amounts of material as follows:

(a) The road in question was built on a gravel road which had been in existence for many years and which had been reinforced with gravel the preceding year. In that area such roads, when subjected to traffic in the thawing period during the spring, often give way due to frost or mud boils and other soft conditions in the road. The plaintiffs began placing material on the road before it had thawed. When the ground underneath thawed, some of the material placed thereon sank and had to be replaced. In addition mud boils developed from time to time over the road and additional material was required in the places where they occurred. It had been estimated 5,500 cubic yards would be required to replace unsuitable soil. The plaintiffs were authorized to excavate certain areas where the major mud boils occurred. The total area so excavated was 6,952 cubic yards and that area was filled by material from the quarry. Allowing for the expansion of the material, the estimated quantity in place in the quarry of 5,500 cubic yards of borrow material to be used to replace unsuitable soil would not be substantially less than that required to fill the 6,952 cubic yards of excavation. However, a reasonable conclusion from the evidence is that additional borrow material was required on account of mud or frost boils which were not excavated and on account of places where the road sank during the thawing season.

(b) As shown in finding 9, the original survey was deficient in that it had not taken full cognizance of driveways and intersections for which borrow material was required. The plaintiffs performed the work in connection with these driveways and intersections as directed by the resident engineer and in doing so used more borrow material than had been included in the original estimate.

(c) During the course of construction it was found necessary to make a change in the location of the road which made an increase in the estimated quantity of borrow material required of approximately 2,000 cubic yards. An error in chaining occurred in the original survey which also increased the estimated quantity by an indeterminate but smaller amount than that required for the change in location.

(d) An indeterminate amount of borrow material, in ad-

dition to the original estimate, was required for a fill at a place on the road known as the Noyes Slough by reason of incomplete cross-sections which were available when the original estimate was made.

26. After the study referred to in the preceding finding had been made, a conference was held in April 1951 at the office of the Alaska Road Commission in Juneau which was attended by representatives of the plaintiffs and of the Alaska Road Commission, and which lasted for two days. Following that conference, the contracting officer allowed a number of the claims which the plaintiffs had submitted, but denied the claims for Item 26 (1) and 28 (2), Unclassified Excavation for Borrow and Overhaul of Borrow Material.

27. The plaintiffs took an appeal from the foregoing decision of the contracting officer to the Commissioner of Roads for Alaska, the designated representative of the head of the department. At the conference in Juneau, referred to in the preceding finding, the suggestion was discussed of having a specific gravity test made of the material in the quarry as a further check on the accuracy of the amount previously determined through the use of the average end area method. By such a test it was expected that a determination could be had of the change in volume from a solid rock condition of the material in the quarry to a disturbed condition of the same material in a truck, that is, a determination of the percentage of swell or voids in the material loaded in a truck as compared with the material in a solid condition in the quarry. Upon or prior to the return of Zimmerman, construction engineer on the project at Juneau and a participant in the conference at Juneau, Noyes, Commissioner of Roads, and Ghiglione, contracting officer, either authorized or instructed Zimmerman to cause a specific gravity test of the kind referred to above to be made. Samples of solid rock material, varying in dimensions from head to fist size, were obtained from two locations in the quarry and the specific gravity of these samples was determined by standard engineering methods. A truck load (using a 3-cubic-yard truck) was taken from each location. The loads were heaped at the quarry. After the trucks were driven to the yard of the Alaska Road Commission in Fairbanks, some two miles from the quarry, the heaped portion of the load

was struck off to make a water level and any holes visible were filled by placing material from the quarry therein. The trucks so loaded were then weighed and a determination made of the weight of the material therein. By application of the specific gravity of this material to the weight of a 3-cubic-yard load, it was determined that a 3-cubic-yard truck load contained 33 percent voids. By the application of that percentage of voids to the yardage as determined on the truck measurement basis contended for by the plaintiffs, a calculated quantity of 76,000 cubic yards was determined for the borrow material in place in the quarry which had been removed by the plaintiffs. Such a result was considered by the Alaska Road Commission as tending to support its determination of the borrow material removed as computed by the average end area method.

The plaintiffs did not know that the specific gravity test referred to above was being made and were not given an opportunity to participate therein. No 3-cubic-yard trucks were used by the plaintiffs on the job—the smallest having a capacity of six or seven cubic yards—and these smaller trucks were used for only a short time at the beginning of the job. The trucks used for most of the work had a capacity in excess of seven yards. The representatives of the Alaska Road Commission used the smaller truck because such a truck happened to be working in the quarry at the time, and without any intent to be unfair to the plaintiffs. However, a more accurate determination and tending to be more favorable to the plaintiffs would have resulted by the use of trucks of the sizes which were used in performing the work.

In considering the plaintiffs' appeal, the Commissioner of Roads made a study of the various items in controversy, including the effect thereon of the specific gravity test referred to above, and under date of June 15, 1951, wrote the plaintiffs allowing some of the claims on appeal. With respect to the items "Unclassified Excavation for Borrow" and "Special Overhaul of Borrow," he increased slightly the quantities which had been allowed by the contracting officer but otherwise disallowed the claims. On these two items his rulings were as follows:

ITEM No. 26 (1) Unclassified Excavation for Borrow

The District Engineer has now completed further studies of the Birch Hill Quarry rock. By careful weighing of loaded trucks and laboratory determination of the specific gravity of numerous representative rock samples it has been determined that a truck struck to water-level capacity after a two-mile haul contained 33% voids. In other words, it took only 4 yards of solid rock to fill a 6-yard truck. These tests were made with great care being exercised to obtain typical loadings, excessive oversize was avoided, and normal fines were carefully included. When struck off after a two-mile haul, any open holes in the top of the load were carefully hand filled.

Heaped loads were also carefully weighed. These tests proved that a heaped truck credited, during the course of the work, with a 7-yard load actually contained only 5.33 yards of solid rock. In other words, by actual weight tests it was found that a typical heaped truck contained only 76% of the solid rock that it was *credited* with during the truck count tabulations. It is reported by the Contractor that 15% swell factor was used in determining the yardage credited to each truck by the truck count method. Multiplying the 85% *credited* by the 76% of credited yardage determined by weight measurements gives an actual capacity of 65% of the in place yardage, which closely checks the initial weight determination of voids in a struck load. It therefore appears sound to apply to the truck load credit of 99,962 yards a factor of 76%, which would result in a calculated quantity of 76,000 cubic yards. This is based on careful loading to the ideal capacity as explained above, so is considered a reasonable verification of the 64,736 delivered cubic yards that our engineers have already established from cross sections of the borrow pits and checked against the 66,567 cubic yards found to exist in the embankment.

It is therefore concluded that the truck count method claimed by the contractor is not the most accurate method of determination of the quantities contemplated by the contract, and that the cross sections of the existing and reconstructed surfaces of the borrow pit, as used by the resident engineer, are the most accurate and are equitable and final. In regard to Mr. Ferguson's brief, it is not agreed that the Government representatives at the Juneau conference accepted the conclusion that the contract method of measurement became impossible as a result of the slide. Neither is it conceded that Mr.

Foster "recognized the impossibility of using the contract method of measurement" or at any time intended to rely upon the truck count for final determination of quantities. If so, why did the resident engineer require the continuation of cross sectioning of the quarry in July and August when the slide occurred on May 11?

Under Article 6.1, Sources of Material, the Special Provisions state that "the cost of any necessary clearing and stripping shall be considered as included in the unit price bid for Item 26 (1)." The resident engineer therefore rule[d] 461.38 cubic yards of the spoil pile as overburden stripping for which no payment was due. However, Specifications FP–41, in Article 26–4.1 provide for inclusion of the yardage of overburden stripped from borrow pits, and the Special Provisions of this contract failed to modify the provisions of that Article. Whatever the initial intent of Article 6.1 of the Special Provisions, it is not conclusive, and it is therefore concluded that Article 26–4.1 of Specifications FP–41 shall govern, and that the entire 69,349.7 cubic yards calculated as excavated from the Birch Hill Quarry shall be allowed as the final pay quantity under Item 26 (1). This yardage was disposed of by delivering 64,736 cubic yards to the roadway, wasting 4,152.4 cubic yards as rejected material, and removing 436.1 cubic yards of overburden.

* * * * *

ITEM No. 28 (2) Cu.-Yd.-Mile Special Overhaul of Borrow

This item is, of course, directly proportionate to the quantity of the borrow under Item 26 (1). Since the truck count measurement of the borrow has been found unreliable as to quantity, it must also be determined unreliable as to overhaul. A recheck of the mass diagrams, showing the disposition of the borrow, gives a final quantity on this item of 217,032.4 cubic yard miles.

28. On July 20, 1951, the plaintiffs requested a reconsideration of the decision by the Commissioner of Roads and on July 30, 1951, the Commissioner of Roads affirmed his prior decision in a letter to counsel for the plaintiffs as follows:

We now have the letter, addressed to us by Mr. Ferguson under date of July 20, protesting the June 15 decision of the Commissioner of Roads for Alaska.

You refer to quantities supported by "sound engineering practices." In view of the contract terms we contend that the cross sections of the borrow pit are the only engineering practices that may be relied upon in

this case. We believe that accurate results have been obtained from the reconstructed position of that part of the pit which was affected by the slide but had not been initially cross sectioned. As previously explained, we rely upon this cross sectional method of computing the volume of the material in its original position. We have confidence in those quantities because the volume of the embankment, as now in place, strongly supports the calculated excavation quantities and a load weight, specific gravity test gives further confirmation. You contend that the "test referred to in your decision clearly indicates" erroneous calculations. We believe that a carefully loaded and subsequently hand packed test truck would certainly hold more rock than the average of trucks hauling under job conditions. We therefore believe that the factor derived from the load test, as applied to the truck count, gives a very reasonable confirmation of our calculated 64,736 excavated yards when it shows an ideal, hand packed, capacity of 76,000 yards.

You now suggest a compromise. In matters of this nature the contracting officer, or other official of the executive department of the Government, has no authority to compromise. However, what you really offer is not a compromise but the establishment of another method of measurement, or rather the re-examination of one of the methods we have already used as a check. We do not believe that such a re-examination would produce results materially differing from the test made by our forces, which was conscientiously carried out under procedures stipulated by recognized authorities. We therefore see little to be gained by further tests, but certainly have no objection to your client's making whatever tests he desires.

The June 15, 1951, decision of the authorized representative of the head of the department is therefore reaffirmed and is final.

29. The decision of the contracting officer, which was affirmed on appeal to the Commissioner of Roads, with respect to the total amount of borrow material excavated and similarly with respect to the overhaul item, was not supported by substantial evidence. When all the evidence is considered, and the different methods of measurement are put together, it is a reasonable conclusion that at least 84,471 cubic yards of borrow material were excavated instead of 69,349.7 cubic yards allowed by the defendant, that is, 15,121.3 cubic yards more than allowed which, at the

contract price of $1.29 per cubic yard, amounts to $19,506.48. Since the amount allowable for the overhaul items varied in direct proportion to the volume of borrow material removed, the cubic-yard miles allowable are 267,727.8 instead of 217,032.4; that is, 50,695.4 cubic-yard miles more than allowed by the defendant, which, at the contract price of 32 cents per cubic-yard mile, amounts to $16,222.53.

30. One of the items involved in carrying out the contract involved herein was paving the road with asphalt. To perform that work it was necessary for the plaintiffs to have an asphalt plant. At the time they submitted their bid and entered into the contract, the plaintiffs contemplated renting or buying one of two asphalt plants located in the State of Washington. The rental costs including transportation, erection and dismantling would have been approximately $10,700.

31. After the contract was executed the plaintiffs learned that there was an asphalt plant at Ladd Air Force Base in Fairbanks. In April 1950 a representative of the plaintiffs called upon Maj. Leon Russell, the Air Installation Officer at that place, to determine whether the plaintiffs could rent the asphalt plant located there. Major Russell advised the plaintiffs' representative that the roads on the airfield needed seal coating and that if the plaintiffs would seal coat certain roads on the base, he would allow them to use the asphalt plant in return for such service. On April 8, 1950, the plaintiffs wrote Major Russell, in part, as follows:

> We are now deferring our plans for the purchase and shipment of any asphalt equipment for the College Road job which we are under contract to the Alaska Road Commission. As a result of our talk with you concerning this matter, we are sure that an equitable arrangement can be consummated which will definitely work out to the advantage of the Government, and also save our firm considerable capital investment for such a small quantity of asphalt mix required for this job.

32. The representative of the plaintiffs had further conversations with Major Russell and arrived at a mutually agreeable proposal along the line indicated in the preceding finding. Major Russell said among other things that he would go through channels and find out if he had the author-

ity to enter into such an agreement. About the middle of May 1950, Major Russell advised plaintiffs that he had been granted the authority to make the deal and that plaintiffs should write him a letter setting out the agreement theretofore reached. On May 17, 1950, the plaintiffs wrote the following letter to the Office of the Air Installation Officer, Ladd Air Force Base, for the attention of Major Russell, on which Major Russell indicated his approval as set out below:

> Reference is made to our recent conversation regarding the Asphalt Plant. We wish to submit the following agreement for your consideration.
>
> 1. The Contractor agrees to accomplish the following work items on Ladd Air Force Base for the Air Installations Officer during the 1950 Construction Season:
>
> a. Seal coat the main paved roads which includes approximately nine lineal miles of road. Seal coat to consist of 30# of chips and .25 gal. of asphalt per square yard.
>
> b. Operate and maintain the Asphalt Mixing Plant located in the 500 zone, and produce a maximum of 10,000 tons of asphalt mix. Mix to be delivered to A. I. O. operated trucks at the Asphalt Plant.
>
> 2. The Air Installations Officer agrees to furnish the Contractor with the following materials and equipment for prosecution of work items listed above:
>
> a. Asphalt Plant and all allied equipment in operating condition.
>
> b. Foreman for Asphalt Plant who will oversee equipment only.
>
> c. All fuel oil, oils, and grease for A. I. O. owned equipment.
>
> d. Chips and aggregate at bulkhead.
>
> e. All equipment required for applying seal coat with the exception of dump trucks. (The Contractor is to hire a distributor operator specified by the A. I. O. for operation of the Government owned asphalt distributor.)
>
> 3. In return for the work to be accomplished by the Contractor as listed in paragraph #1 above, the Air Installations Officer will permit the Contractor to use the Asphalt Mixing Plant for producing approximately 10,000 tons of mix for the Contractor's job near Fairbanks, Alaska. At no time will the production of asphalt mix for the Contractor's requirements be allowed to interfere with production of

asphalt mix for the A. I. O. requirements, providing the Contractor is given three days advance notice.
Submitted:

[s] Russell H. Williams,
Williams Equipment Company.
Reed and Martin, Inc.
A Joint Venture.

Approved:

[s] Leon Russell,
Air Installation Officer.

33. Major Russell, the Air Installation Officer, had charge of the maintenance of roads, buildings, and facilities of Ladd Air Force Base. He was not, however, a contracting officer.

34. Seal coating referred to in the letter of May 17, 1950, was the application of a surface dressing to an asphalt surface to prevent water from entering into the pores of the asphalt. It is maintenance work which is required to be done at intervals of approximately two years. The plaintiffs did the seal coating called for under the terms of the letter of May 17, 1950, placing a seal coat on some nine or ten miles of roadway at Ladd Field and otherwise fulfilling the terms and conditions set out in that letter. The work was begun about the middle of June 1950 and completed shortly after July 1, 1950. The fair value of that work was not less than $10,166.39, the amount deducted from the plaintiffs' contract price as shown in finding 39.

35. On June 9, 1950, Major Russell forwarded copies of the letter of May 17, 1950 (referred to in finding 32) to his superior officer. Under date of July 13, 1950, Major Russell was advised by radiogram by his superior officer that there was no authority for an agreement of the type set out in the letter of May 17, 1950, and that work thereon should be stopped immediately. On July 18, 1950, in response to the foregoing radiogram, Major Russell advised his superior officer that the plaintiffs had already completed their part of the agreement and urged that it was in the best interest of the Government that the agreement be carried out in its entirety. His letter reads in part as follows:

> c. Mr. Williams agreed that if the base would furnish the plant, he would do the work, as per the attached agreement.

d. This was believed to be a good proposition whereby the Government would gain considerably by getting a job done at very little cost, by the use of equipment which would otherwise be idle.

e. This Agreement was cleared through Base Legal Department and [w]as signed by the Air Installation Officer and the Contractor.

f. This proposition was presented to Washington and no objections were received, provided certain facts were covered in the Agreement, which are believed to be covered.

g. On 1 June 1950 the Williams Construction Company started the seal coating and completed same. Mr. Williams proceeded with the rest of the bargain and in all ways has carried out his part of the Agreement.

2. It is felt that it is of the best interest to the Government that this agreement be carried out in its entirety, and is considered good business.

On July 18, the Headquarters of the Alaskan Air Command formally advised the Commanding General, Ladd Air Force Base, that such an agreement was unauthorized and that, therefore, favorable consideration could not be given thereto.

36. Shortly after he received the radiogram of July 13, 1950, referred to in the preceding finding, Major Russell advised plaintiffs of his inability to carry out his agreement to deliver the asphalt plant and suggested that arrangements be made to have the plant borrowed by the Alaska Road Commission from Ladd Air Force Base and then rented by the Alaska Road Commission to the plaintiffs. Major Russell stated that if this could be arranged, he would arrange for payment for the work which had already been done by the plaintiffs at Ladd Field.

37. After discussions with the plaintiffs, officials of the Alaska Road Commission and Major Russell, the District Engineer of the Alaska Road Commission sent the following letter to the Commanding Officer, Fairbanks, Alaska:

Williams Equipment Company and Reed & Martin, Inc., have a contract with the Alaska Road Commission for constructing the Fairbanks to College and portion of Steese Highway Road Project.

We have been informed that there is an asphalt plant at Ladd Field, which, if proper arrangements could be made between the contractor and the Air Installation

Officer for use of the plant would materially aid in an early completion of the road project.

Your consideration of this matter would be greatly appreciated.

On July 20, 1950, Major Russell transmitted the above letter to his superior officer with the recommendation that the request be granted.

The Alaska Road Commission had a policy against renting Government-owned equipment to any of its contractors since it was felt such action might prejudice other bidders on a project. However, since no other asphalt plant could be made available to complete this project before the close of the season, an exception was made in this case and the request made for the loan of the plant as set out above. The request was granted and the plant was made available for the use of the plaintiffs. It was not in good operating condition at that time and it accordingly became necessary for the plaintiffs to do considerable work thereon and make certain repairs before it could be used. It was thereafter used by the plaintiffs as contemplated in the performance of the contract.

38. Discussions were had between plaintiffs and representatives of the Alaska Road Commission as to the proper rental for the asphalt plant. It was agreed that had plaintiffs rented the plant in the State of Washington as originally contemplated, the rental, transportation charges, costs of erection and dismantling would total about $10,700. That amount was divided by the estimated quantity of plant mix to be laid giving a figure of $1.30 per ton as a rental figure for the plant. While the plaintiffs orally agreed to that rental figure, when they did so they relied upon the assurance previously given by Major Russell that they would be paid by the Ladd Air Force Base authorities for the work heretofore referred to which they had done at Ladd Field. Shortly thereafter Major Russell advised the plaintiffs that payment could not be made for the seal coating which had been performed at Ladd Field. As a result of the failure to receive payment for the work which they had performed at Ladd Field, the plaintiffs refused to sign a change order prepared by the Alaska Road Commission reducing the unit price of

asphalt per ton by $1.30 which reduced the estimated total of the contract by $10,790.

39. Under date of October 13, 1950, the contracting officer directed that the change order be considered a written order changing the specifications and that the rental stipulated therein be deemed to be an equitable adjustment of the contract price. He advised plaintiffs of their right to appeal from that determination to the designated representative of the head of the department. This was one of the matters discussed at the conference in April 1951 heretofore referred to and was within the scope of the appeal taken by plaintiffs to the designated representative of the head of the department. In denying the appeal such representative stated in his letter of June 15, 1951, as follows:

> PLANT RENTAL
>
> The decision of the Contracting Officer set forth in his letter of October 13 has been reviewed and is hereby affirmed by the undersigned as Authorized Representative of the Head of the Department. Since the Change Order, previously presented to you, modifies the unit price of Item No. 140 (1), in strict accordance with the initial agreement, the modified price has been used in the accompanying voucher rather than indicating a deduction for plant rental. In order that final settlement on this contract may be made it is again requested that you execute Change Order No. 2 and return the indicated papers to this office.

The plaintiffs refused to execute the change order. Upon completion of the contract, it was determined that 7,820.3 tons of asphalt had been actually used and accordingly $10,166.39 was deducted from payments to the plaintiffs. No amount has been paid to the plaintiffs on account of the work done at Ladd Field.

CONCLUSION OF LAW

Upon the foregoing findings of fact, which are made a part of the judgment herein, the court concludes that as a matter of law the plaintiffs are entitled to recover, and it is therefore adjudged and ordered that they recover of and from the United States forty-five thousand eight hundred ninety-five dollars and forty cents ($45,895.40).

In the United States Court of Claims

No. 47331

(Decided January 11, 1955)

GENERAL CASUALTY COMPANY OF AMERICA, CENTRAL SURETY AND INSURANCE CORPORATION, WACKER CORPORATION, AND N. E. DAUGHERTY, D/B/A N. E. DAUGHERTY CONSTRUCTION COMPANY

v.

THE UNITED STATES

Mr. Ernest Hubbell and *Mr. Clifford B. Kimberly* for the plaintiffs.

Mr. Carl Eardley, with whom was *Mr. Assistant Attorney General Warren E. Burger*, for the defendant.

OPINION

LARAMORE, *Judge*, delivered the opinion of the court:

This suit arises out of a contract to construct an airport at Zanesville, Ohio, and the petition is stated in two counts. Count one of the petition, a Lucas Act claim, was dismissed by this court on January 8, 1952. Count two is a contract claim for equipment rental and expense, ditch rock excavation, gravel processing plant, overtime wages, delayed damages, unpaid balance of contract price, shale excavation and rock excavation.[1]

Plaintiff Daugherty entered into a contract with defendant, acting by and through the Civil Aeronautics Administration, for the construction of an airport at Zanesville, Ohio. The contract price was estimated to be $1,047,328. The ac-

[1]No mention is made in plaintiffs' briefs as to processing plant claim or the claim for overtime wages. We assume and will treat them as having been abandoned. In any event the processing plant was installed at the election of the contractor, since the contract permitted the use of any one of several methods.

cepted bid price included a unit price of 25 cents per cubic yard for grading and $1.35 per cubic yard for rock excavation.

On May 18, 1943, plaintiff Daugherty executed and delivered to the defendant payment and performance bonds both executed by plaintiffs, General Casualty Company and Central Surety & Insurance Corporation, in the sum of $418,931.20 each.

Plaintiff Daugherty received notice to proceed effective June 10, 1943. The project was to be completed within 150 calendar days thereafter. Daugherty began operations on June 17, 1943. The facts are sufficiently set out in the opinion below.

The plaintiffs' first cause of action is based upon the allegation that the Government coerced plaintiffs into equipping the job for full scale operations, after the cosureties had taken over the work, before a resumption date was apparent or determined.

Plaintiffs say that after the cosureties had taken over the work and near the end of the winter shutdown under a stop order issued by defendant, the cosureties were required to equip the job with the large amount of heavy construction machinery which would be required for full scale operations, long before a possible resumption date was apparent or determined.

Plaintiffs further say that the cosureties upon demand of defendant furnished evidence that they would be ready to perform when work could be resumed and for the purpose had sufficient equipment on the job to begin full scale operations by April 1, 1944. But defendant required the cosureties to comply with its demands that equipment be placed on the job forthwith and threatened that if they did not comply large payments due plaintiffs for work done would be withheld and made the further threat to default the cosureties on the contract. The cosureties say that such action on the part of the defendant was coercion and that in the period when they were required to equip the job from April 1 to May 10, 1944, they performed no pay item work and by having furnished the equipment demanded incurred thereby an unnecessary expense of $13,283.97.

The contract specifications provided, as to equipment, in part as follows:

> 2.1 *General.* The Contractor shall maintain on the job sufficient equipment of the types needed to complete all the work in accordance with the requirements of this specification within the contract time. He may use any type of earth-moving equipment capable of accomplishing the specified and required results. * * *

Daugherty made strong but unsuccessful efforts to get sufficient equipment which was in working order. He fell behind in rental payments on some equipment which was then withdrawn from the job by the equipment owners. After numerous warnings, it was finally necessary to terminate the right of Daugherty to proceed effective as of November 24, 1943.

An examination of the evidence indicates that defendant made two demands: (1) that plaintiffs furnish information concerning equipment availability by March 10; (2) that plaintiffs bring their equipment to the site by April 15, or sooner, if weather conditions permitted.

Since the damage about which plaintiffs complain concerns the loss of rental on equipment brought to the site in April, it is apparent that the alleged breach of contract concerns demand number two.

On January 28, 1944, the contracting officer advised plaintiffs that 52 calendar days remained for the completion of the work; that to complete in the contract time plaintiffs "must have sufficient equipment on the job by April 15, 1944, or sooner, if weather conditions permit, to operate on a full scale basis."

Normal grading operations commence in the Zanesville area about March 15, but due to unseasonable weather plaintiffs were not able to commence work until May 1 and notice to proceed was not issued until May 10. In January the reasonable expectation was that grading operations would commence about March 15. At that time, January, such a demand could not be called unreasonable. Thus, if the demand was not a breach of contract in January, it was not a breach of contract in April, for the plaintiffs' loss resulted not from compliance with the order but from the unseasonable weather which prevented the issuance of the notice to

proceed at the expected time. It has been held that the Government is not responsible for the vagaries of the weather. *Warren Brothers Roads Co.* v. *United States*, 123 C. Cls. 48, 79.

Inasmuch as grading operations would normally commence about March 15, any prudent contractor would have been prepared to proceed shortly thereafter. Hence plaintiffs' movement of equipment to the site in April was a normal action and one which would have taken place regardless of any demand by the defendant.

Therefore, it must be concluded that plaintiffs brought the grading equipment to the site in April not because of threats, but because it was what any prudent contractor would have done. It was not a breach of the contract by the Government and the plaintiffs could not recover on this claim.

The plaintiffs' second claim is for recovery of the alleged cost of ditch rock excavation. Plaintiff Daugherty subcontracted the drainage work to the Weikel Construction Company.

The profile drawings of the drainage structures showed them to be located in an area and in a strata of soil classified on the boring log as "Horizon C" material defined as "hard, impervious, silty clay" which was "relatively hard and impervious."

In digging the trenches rock was encountered which had to be blasted and the subcontractor was paid therefor at the rate of $5 per cubic yard.

The fact that plaintiff Daugherty anticipated rock is evidenced by the terms of the subcontract. The uncontested evidence is that the subcontract carried a provision, the purport of which was to protect the subcontractor against rock should it be encountered. It also appears from the evidence that rock was anticipated below grade on this part of the job. The evidence further shows that blasting is ordinarily necessary because of the confined nature of this type of excavation.

Thus plaintiffs' contention that they are entitled to recover an additional amount because of an alleged changed condition is without foundation. Furthermore, there is nothing in the evidence to disclose that plantiffs ever called the atten-

tion of the contracting officer to an alleged changed condition in connection with this portion of the work.

Either failure to show a changed condition or failure to give notice of a changed condition would prevent recovery of plaintiffs on this claim. Having failed to show a changed condition, this item of plaintiffs' claim is denied.

The third claim of plaintiffs is for the unpaid balance of contract price withheld from plaintiffs' cosureties and applied to payment of taxes owed by plaintiff Daugherty.

At the time Daugherty's contract was terminated defendant was indebted to him in the amount of $56,783.56 for work performed.

Defendant accepted the offer of the cosureties to complete the contract but stated that claim to all sums due under the contract at time of termination could not then be allowed since there was at the time of termination a valid assignment of money due under the contract in favor of the LaSalle Industrial Finance Corporation. This was satisfactory to the cosureties who then did go ahead with the work without a supplemental contract. On January 3, 1944, the Comptroller General certified as due the LaSalle Corporation, as assignee of Daugherty, the sum of $56,783.56. Before a check was issued, a tax levy was filed against the contractor in the amount of $45,366, in connection with the Zanesville contract and $12,863.10 assessed in connection with other work. The defendant thereupon refused the demand of the cosureties for payment of the amount earned by Daugherty prior to the termination of his right to proceed and by appropriate bookkeeping entries defendant set off the sum due Daugherty against his tax indebtedness.

Plaintiffs contend the surety companies had a prior lien to the amount in dispute and are entitled in this claim to recover said amount. The law is to the contrary. It has been settled that the Government which has funds in its possession may apply said funds against amounts owed to the Government by a prime contractor. *United States* v. *Munsey Trust Company*, 332 U. S. 234; *Standard Accident Insurance Company* v. *United States*, 119 C. Cls. 749.

The contractor could not, by assignment, transfer greater rights than he had himself and as a matter of law the Gov-

ernment had the right to set off the sums due under the contract against the amount of taxes due and owing by plaintiff Daugherty. Thus, plaintiffs are not entitled to recover on this claim.

The plaintiffs' third cause of action is for rock and shale excavation.

The issues presented in this claim are (1) whether defendant misrepresented the materials; (2) whether the shale constituted a changed condition; (3) if so, whether Daugherty gave notice as required by article 4; (4) whether decision of a contracting officer, affirmed by the head of the department, that (a) there was no rock, (b) there was no notice of a changed condition, (c) there was no changed condition, are final and conclusive; (5) the extent of plaintiffs' recoverable damages, if any.

The site of the proposed airport was a rugged hilly country cut by deep ravines with ground elevations varying from elevation 870 to 917. It was estimated that approximately two million cubic yards of material would have to be moved in order to flatten out the site for airport purposes. To assist bidders the defendant made borings at intervals of 500 feet along the center lines of the runways and notified the bidders that hand augers were used for this purpose. Such augers bring up earth in granular form. At stages 33 on the E/W runway and 38 on the NW/SE runway, intermediate borings were made between the regular intervals mentioned. All borings, 35 in number, were represented by defendant on the contract drawings. The defendant's engineer making the hand auger borings, found the soil to lie generally in three horizons, as follows:

A. Brown topsoil, from zero to six inches in depth.

B. Yellow tan silty clay, six inches to nine feet in depth.

C. Light tan silty clay and blue clay relatively impervious and hard from nine feet in depth to grade.

The engineer reported also some evidence of shale and loose rock below grade, but the charts and borings did not show that plaintiffs would encounter hard shale as found in later excavation. The borings were not all examined scientifically, but only four samples thereof were submitted

to the Flood Soils Laboratory for analysis, and the table of soils characteristics in the contract drawings was apparently based upon the laboratory report. This fact was unknown to plaintiffs. The defendant did not deliberately misrepresent the materials it thought would be encountered or hold back any information it had from plaintiffs.

There was a duty on the part of defendant, if it made borings, to fully disclose such facts as were found. *Ranieri* v. *United States*, 96 C. Cls. 494, 506. This it did, and we can find no reason to hold that the defendant misrepresented the facts to such an extent as to cause a breach of contract on its part.

The second, third, and fourth issues presented by this claim are for the purposes of this opinion grouped.

The borings and data made and furnished by defendant were inadequate, and plaintiffs encountered shale in locations and amounts seriously in excess of those indicated by the drawings. In these respects the contract drawings were not approximately correct. Plaintiff Daugherty's reasonably careful inspection of the site gave no indication to him that he would encounter materials any different from those represented on the contract drawings.

The total quantity of excavated materials moved was 2,056,262 cubic yards.

In July 1943 plaintiff Daugherty encountered hard shale and concluded that it could best be removed by breaking it up with a rooter. A rooter is a heavy blade which projects into the ground and operates on the principle of a plow. Daugherty's rooter had three teeth, but after experimentation it was found that in some areas the hard shale could more easily be rooted by removing two of the teeth, thus giving increased power to the operation. The rooter was powered by a crawler-type tractor having 110 drawbar horsepower. The hard shale could not have been removed by pans used in taking out clay without first rooting it. Considerable quantities of soft shale were also encountered. This was "grading" and was handled with the same equipment, pans, and tractors as used on dirt.

The defendant classified the material, now claimed by the plaintiffs to have been hard shale and rock, as "grading" in each of the 1943 monthly estimates, and plaintiff Daugherty

was paid upon that basis. Daugherty did, however, protest orally in September 1943 to the resident engineer about such payment. The following month in a letter to the engineer in charge of design and construction, he stated that 200,000 cubic yards of hard shale had been encountered slowing operations but did not claim a changed condition for purposes of reclassification or payment. Previously Daugherty's engineer and two successive superintendents made strong oral representations about a changed condition to defendant's resident engineer and his assistants and asked that payment be made for rock. This was refused upon the basis that it was being rooted and therefore was grading within the contract classifications. Plaintiffs' engineer also told the resident engineer that he was going to cross section the hard materials and make claims for additional compensation therefor. The resident engineer was requested to cross section the materials but declined to do so. Plantiffs requested the resident engineer to have representatives present while plaintiffs took elevations, but he did not do so. The resident engineer did not report to the contracting officer the representations made by plaintiff Daugherty about the changed conditions encountered until March 30, 1944. The first such claim was made by the contractor in writing on February 4, 1944, after counsel had been retained and was for 193,000 cubic yards of rock alleged to have been excavated in 1943. This claim was denied February 10, 1944.

Plaintiff Daugherty had not excavated a shale bank near the runway intersection and when the work was resumed in 1944 the cosureties contended that this shale constituted rock within the contract definition. The pertinent specifications provided as follows:

> 3.1 *General.* * * *
> All material encountered shall be considered as unclassified excavation unless otherwise specified. The Contractor shall inform and satisfy himself as to the character, quantity and distribution of all material to be excavated. No payment will be made for any excavated material which is used for purposes other than those designated. * * *
>
> * * * * *
>
> 3.3–b *Classification of Excavation.* All excavated material will be classified as "Grading," or "Rock Excavation."

(1) *Grading* shall consist of the removal and satisfactory disposal of all loam, sand, clay, gravel, soft shale, soft slate, old gravel, broken stone or bituminous macadam pavements, loose or decomposed rock, boulders of less than one-half (½) cubic yard in volume and all other materials not otherwise classified under these specifications.

(2) *Rock Excavation.* Rock excavation shall include all solid rock and boulders having a volume of one-half (½) cubic yard or more, and all shale or ledge rock which cannot be removed with an extra heavy duty rooter powered with a crawler-type tractor having 110 drawbar horsepower in good condition and on firm footing, or a modern power shovel of three-fourths (¾) cubic yard capacity in good condition, without continuous drilling or blasting; although blasting may be resorted to, to facilitate the work. * * *

* * * * *

The special proposal conditions provided in part as follows:

10. LOCAL CONDITIONS: Bidders or their authorized agents are expected to inspect the site of the work or to otherwise thoroughly acquaint themselves with local conditions as may affect performance of the contract and to reasonably anticipate the difficulties to be encountered therein.

11. BORINGS: Borings where shown were made by means of a hand auger. Borings were made at the approximate locations shown on the drawings, and the character and depth of materials found are believed to be approximately correct.

* * * * *

The contract provided in part as follows:

ARTICLE 3. *Changes.*—The contracting officer may at any time, by a written order, and without notice to the sureties, make changes in the drawings and/or specifications of this contract and within the general scope thereof. If such changes cause an increase or decrease in the amount due under this contract, or in the time required for its performance, an equitable adjustment shall be made and the contract shall be modified in writing accordingly. Any claim for adjustment under this article must be asserted within 10 days from the date the change is ordered: *Provided, however,* That the contracting officer, if he determines that the facts justify such action, may receive and consider, and with the approval of the head of the department or his duly authorized representative, adjust any such claim asserted

at any time prior to the date of final settlement of the contract. If the parties fail to agree upon the adjustment to be made the dispute shall be determined as provided in article 15 hereof. But nothing provided in this article shall excuse the contractor from proceeding with the prosecution of the work so changed.

ARTICLE 4. *Changed conditions.*—Should the contractor encounter, or the Government discover, during the progress of the work subsurface and/or latent conditions at the site materially differing from those shown on the drawings or indicated in the specifications, or unknown conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the plans and specifications, the attention of the contracting officer shall be called immediately to such conditions before they are disturbed. The contracting officer shall thereupon promptly investigate the conditions, and if he finds that they do so materially differ the contract shall, with the written approval of the head of the department or his duly authorized representative, be modified to provide for any increase or decrease of cost and/or difference in time resulting from such conditions.

* * * * *

ARTICLE 15. *Disputes.*—Except as otherwise specifically provided in this contract, all disputes concerning questions of fact arising under this contract shall be decided by the contracting officer subject to written appeal by the contractor within 30 days to the head of the department concerned or his duly authorized representative, whose decision shall be final and conclusive upon the parties thereto. In the meantime the contractor shall diligently proceed with the work as directed.

It was agreed that a test would be made to see if the material could be handled by a three-quarter cubic yard shovel without continuous drilling or blasting. The test was made in May 1944. The shovel handled the materials with difficulty, but was able to do so without drilling or blasting. The shovel did stick sometimes and it required several passes with the bucket to get a load, whereas in gravel, dirt, or clay this would not have been necessary. As a consequence of the test, defendant declined to pay for "rock." The plaintiffs' cosureties then completed the contract and were paid for "grading." The plaintiffs did not rely solely on the three-quarter cubic yard shovel but also used a one-yard shovel which had more power, approximately twice the

weight of the smaller shovel, and was more efficient. The material could have been moved with the smaller shovel alone without blasting, but this would have required much additional time which was not available. Even with the larger shovel the teeth would break off in the hard shale and both machines required considerable repair in this regard. This shale not only was hard to excavate and required more time than clay, but also did not compact well and required more loads to the fills, increasing costs.

It will be noted that article 4 of the contract provided "should the contractor encounter, * * * during the progress of the work subsurface and/or latent conditions at the site materially differing from those shown on the drawings or indicated in the specifications * * *."

This case in principle is much like the case of *W. C. Shepherd* v. *United States*, 125 C. Cls. 724, 737, where the court said:

> We do not think there can be any question but that the wet material was unforseen by both plaintiff and defendant. It was an unknown, subsurface condition differing materially from that shown by the drawings, specifications and borings, and one which could not have reasonably been anticipated from a study of the drawings, borings and samples, or by an examination of the site. * * * Plaintiff is therefore entitled under article 4 o fthe contract to recover the full excess costs of excavating, hauling, and placing the wet material on the fill, unless limited in his recovery by a matter hereinafter discussed.

In the instant case we do not think there can be any question but that there was an unknown subsurface condition differing materially from that shown by the drawings, specifications and borings, and one which could not have reasonably been anticipated from a study of the drawings, specifications and borings, or by an examination of the site.

Plaintiffs are therefore entitled, under article 4, of the contract, to recover the cost of excavating materials different from those shown on the drawings, specifications and borings, if notice was given as required by article 4.

Having found a changed condition under article 4, it then becomes necessary to determine whether Daugherty gave notice as required by article 4.

This question is also settled by the decision of this court in the *Shepherd* case, *supra*, wherein the court ruled that calling the attention of the resident engineer to conditions constituted compliance with article 4 of the contract.

Article 21 (b) of the contract provided that "The term 'contracting officer' as used herein shall include his duly appointed successor or his authorized representative."

In both the *Shepherd* case and in the instant case the resident engineer was clothed by the contracting officer with authority to be on the job and see that the work was performed. In the *Shepherd* case the court held that the resident engineer was the authorized representative of the contracting officer, that the resident engineer had the duty to communicate to the contracting officer matters which were brought to his attention regarding conditions encountered in the excavation, and that notice to the resident engineer constituted compliance with the contract. In the instant case Daugherty protested orally to the resident engineer in September 1943 and a month later in a letter to the engineer called his attention to the fact that hard shale had been encountered. Previously Daugherty's engineer and two successive superintendents made strong oral representations about a changed condition to defendant's resident engineer and his assistants and asked that payment be for rock.

It would be inane indeed to suppose that the resident engineer was at the site for no purpose. We believe as in the *Shepherd* case, *supra*, that the resident engineer was the authorized representative of the contracting officer.

Plaintiff Daugherty's responsibility ended when notice was given to the authorized representative of the contracting officer. If the resident engineer did nothing, certainly it was no fault of the plaintiff Daugherty. He did all that was required of him under the contract.

That plaintiffs' cosureties made claim of a changed condition in 1944 there can be no doubt. On March 30, 1944, the resident engineer acknowledged to his superior the fact that plaintiffs were claiming rock. The claim was made in writing under date of February 4, 1944, and was denied February 10, 1944.

When the contracting officer and the head of the department denied and failed to recognize a changed condition

where plaintiff encountered 216,755 cubic yards of hard shale which was not indicated in the borings and contract drawings and which was more difficult of removal than grading, and when said officers failed to make an equitable adjustment for removal thereof, the determination was arbitrary and was not supported by substantial evidence.

Thus, the decision of the contracting officer, affirmed by the head of the department, is not final and conclusive and not binding on the parties hereto.

Therefore, we find that notice of a changed condition under article 4 was given the contracting officer and plaintiffs are entitled to recover because of such changed condition. *Great Lakes Dredge & Dock Company* v. *United States*, 116 C. Cls. 679, *cert. den.* 342 U. S. 953; *Loftis* v. *United States*, 110 C. Cls. 551.

We then approach the question of the extent of plaintiffs' recoverable damages.

The following are the sums allowed and paid by the defendant on the disputed materials at 25 cents per cubic yard, the quantities and character of excavation claimed by plaintiffs, and the sums claimed therefor:

	Cubic yards	Unit price	Total claimed	Allowed	Balance claimed
Hard shale	418,851	$0.65	$272,253.15	$104,712.75	$167,540.40
Ledge rock	216,755	1.35	292,619.25	54,188.75	238,430.50
	635,606	-------	564,872.40	158,901.50	405,970.90

The 418,851 cubic yards of material plaintiffs claim was hard shale and which had to be rooted was not hard shale and was removed in part with the equipment plaintiffs admit using thereon; *viz*, a rooter with three teeth powered by a crawler-type tractor having 110 drawbar horsepower, after which pans were used. There was not blasting. We believe that the material, while difficult of removal, was grading within the terms of the specifications, for which plaintiffs have been fully paid at the contract price for grading of 25 cents per cubic yard.

The 216,755 cubic yards was hard laminated shale of a type not shown on the contract drawings nor by the defendant's original borings.

In May 1944 when the work was almost completed the defendant caused borings to be made by the H. C. Nutting Company, a firm of soil experts. Out of some 17 borings, three were made within the area where the plaintiffs contended they encountered shale and rock in excavation, and the borings showed shale of various characteristics, together with some conglomerate limestone. On two of the three holes the material was hard enough to get core samples with a rotary core drill with diamond tools for cutting. On the other holes a sample tube was driven in with a No. 225 hammer using a three inch stroke.

To excavate this material required shovels and sometimes a rooter with one tooth powered by two tractors, one pushing and one pulling. The 216,755 cubic yards could not for the most part have been removed in any efficient manner without a one-yard shovel supplementing the three-quarter yard shovel and by being loosened in some areas with a single tooth rooter powered by two tractors. The job could have been completed with a rooter powered by one tractor and with the use of a three-quarter cubic yard shovel, but it would have taken "forever and a day." Plaintiffs did not have and were unable to obtain equipment and supplies required for extensive drilling and blasting.

In the completion of the project the cosureties expended the sum of $1,584,942.27 of which $487,882.90 was a loss. The cosureties have paid up to December 31, 1951, a total of $493,991.64 which is the sum claimed by them of any judgment rendered herein.

Plaintiffs filed a claim for rock and shale excavation on February 17, 1945. The contracting officer denied the claim on June 4, 1945.

In addition, as we have heretofore noted, it was necessary to use a one-yard shovel, aproximately twice the weight of the smaller shovel, and even then the teeth would break off in the hard shale causing considerable repairs and delays. This shale was not only hard to excavate and required more time, but did not compact well and required more loads to the fills, increasing costs.

It is apparent from the evidence that the 216,755 cubic yards of excavation was not rock nor was it grading within

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the terms of the contract for which the plaintiffs were paid at the contract price of 25 cents per cubic yard. A fair and reasonable price for excavation of hard shale would be approximately 65 cents per cubic yard.

Plaintiffs have been paid $54,188.75 at the contract price for grading.

Therefore, we find because of a changed condition under article 4 of the contract plaintiffs are entitled to judgment in the sum of $86,702, which is based upon excavation of 216,755 cubic yards at 65 cents per cubic yard, less the sum of $54,188.75 paid plaintiffs at the rate of 25 cents per cubic yard.

The final item of plaintiffs' claim is for $4,337.91, the amount withheld by defendant at the termination of plaintiffs' contract for delay under article 9 of the contract. Article 9 of the contract reads as follows:

> ARTICLE 9. *Delays—Damages.*—If the contractor refuses or fails to prosecute the work, or any separable part thereof, with such diligence as will insure its completion within the time specified in article 1, or any extension thereof, or fails to complete said work within such time, the Government may, by written notice to the contractor, terminate his right to proceed with the work or such part of the work as to which there has been delay. In such event the Government may take over the work and prosecute the same to completion, by contract or otherwise, and the contractor and his sureties shall be liable to the Government for any excess cost occasioned the Government thereby. If the contractor's right to proceed is so terminated, the Government may take possession of and utilize in completing the work such materials, appliances, and plant as may be on the site of the work and necessary therefor. If the Government does not terminate the right of the contractor to proceed, the contractor shall continue the work, in which event the actual damages for the delay will be impossible to determine and in lieu thereof the contractor shall pay to the Government as fixed, agreed, and liquidated damages for each calendar day of delay until the work is completed or accepted the amount as set forth in the specifications or accompanying papers and the contractor and his sureties shall be liable for the amount thereof: *Provided*, That the right of the contractor to proceed shall not be terminated or the contractor charged with liquidated damages because of any delays in the completion of the work due to un-

foreseeable causes beyond the control and without the fault or negligence of the contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Government, acts of another contractor in the performance of a contract with the Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather or delays of subcontractors due to such causes, if the contractor shall within 10 days from the beginning of any such delay (unless the contracting officer, with the approval of the head of the department or his duly authorized representative, shall grant a further period of time prior to the date of final settlement of the contract) notify the contracting officer in writing of the causes of delay, who shall ascertain the facts and the extent of the delay and extend the time for completing the work when in his judgment the findings of fact justify such an extension, and his findings of fact thereon shall be final and conclusive on the parties hereto, subject only to appeal, within 30 days, by the contractor to the head of the department concerned, whose decision on such appeal as to the facts of delay and the extension of time for completing the work shall be final and conclusive on the parties hereto.

As we have previously stated, the delay in completing the job was due to unforeseen conditions encountered. Furthermore, the contractor did not refuse or fail to prosecute the work, or any separable part thereof, with such diligence as would insure its completion within the time specified in article 1, or any extension thereof.

In the light of the above and our decision as to changed conditions encountered, we believe the defendant had no right to withhold said sum as damages for delay. Plaintiff is entitled to judgment on this claim in the sum of $4,337.91.

Plaintiff Daugherty rented equipment and received property from the Maxon Construction Company, becoming indebted thereby in the sum of $875.32. The Maxon Construction Company assigned its claim to defendant. Daugherty is indebted to defendant in the sum of $875.32, and defendant is entitled to recover this amount from plaintiffs on its counterclaim.

MADDEN, *Judge;* LITTLETON, *Judge;* and JONES, *Chief Judge*, concur.

WHITAKER, *Judge*, dissenting:

The court says the refusal of the contracting officer to make an equitable adjustment when conditions were encountered differing from those shown on the contract documents was arbitrary and not supported by substantial evidence. I do not believe the record justifies this.

The specifications in section 3.3–b (1) defined grading to include soft shale, and in paragraph (2) defined rock excavation as follows:

> Rock excavation shall include all solid rock and boulders having a volume of one-half (½) cubic yard or more, and all shale or ledge rock which cannot be removed with an extra heavy duty rooter powered with a crawler-type tractor having 110 drawbar horsepower in good condition and on firm footing, or a modern power shovel of three-fourths (¾) cubic yard capacity in good condition, without continuous drilling or blasting * * *.

The opinion of the majority shows that the parties agreed on a test to see if the material could be handled by a three-fourths (¾) cubic yard shovel without continuous drilling or blasting. The opinion stated the result of the test as follows:

> * * * The shovel handled the materials with difficulty, but was able to do so without drilling or blasting. The shovel did stick sometimes and it required several passes with the bucket to get a load, whereas in gravel, dirt, or clay this would not have been necessary. * * * The plaintiffs did not rely solely on the three-quarter cubic yard shovel but also used a one-yard shovel which had more power, approximately twice the weight of the smaller shovel, and was more efficient. The material could have been moved with the smaller shovel alone without blasting, but this would have required much additional time which was not available. Even with the larger shovel the teeth would break off in the hard shale and both machines required considerable repair in this regard. * * *

As a consequence of the test made, defendant declined to pay for rock and insisted that the plaintiff was entitled to be paid only for "grading."

Had I been the contracting officer I might have come to a contrary conclusion, but I cannot say that his conclusion was arbitrary or not supported by substantial evidence, because of the provisions of section 3.3–b of the specifications. This section shows that it was contemplated that shale might be encountered. If it was soft shale it came within the scope of "grading" as defined in subparagraph (1). If it was hard shale, it was to be classified as "rock excavation" as defined in subparagraph (2). Shale was to be included within rock excavation only when it "cannot be removed with an extra heavy duty rooter powered with a crawler-type tractor having 110 drawbar horsepower in good condition and on firm footing, or a modern power shovel of three-fourths (¾) cubic yard capacity." The test showed that this shale could be removed with a power shovel of three-fourths cubic-yard capacity. It is true it was difficult to so remove it, but it was not impossible and, hence, there was a basis for the contracting officer's determination that the material did not come within the definition of "rock excavation," but within the definition of "grading." There were but two classifications of excavation provided for in the contract, to wit, "grading" and "rock excavation." There was no intermediate classification.

I see no justification for making an equitable adjustment in the contract price. It is true the borings made by defendant did not show shale, but the specifications show that it was expected that shale might be encountered, and they provided payment for its excavation—as "grading" if it was soft, and as "rock" if it was hard. Under the specifications it had to be classified as one or the other; there was no intermediate classification.

There was a substantial basis for the contracting officer's determination that this was not rock excavation and, hence, it must be classified as "grading." Since there was substantial evidence to support the contracting officer's decision, it is binding on us.

I must, therefore, respectfully dissent.

FINDINGS OF FACT

The court, having considered the evidence, the report of Commissioner Marion T. Bennett, and the briefs and argument of counsel, makes findings of fact as follows:

1. Plaintiff, General Casualty Company of America, is a corporation duly organized and existing under the laws of the State of Washington with principal offices in Seattle, and engaged in the business of undertaking contracts of suretyship.

Plaintiff, Central Surety and Insurance Corporation, is a Missouri corporation with its principal office in Kansas City, Missouri, and likewise engaged in the general surety business.

Plaintiff, Wacker Corporation, is duly organized and existing under the laws of the State of Illinois with its principal office in Chicago and is the legal successor in interest of the LaSalle Industrial Finance Corporation to all matters stated herein. The Wacker Corporation is a nominal party plaintiff and waives any claim to any part of the proceeds of the claim asserted in this suit.

N. E. Daugherty is an individual residing in Indianapolis, Indiana, and at all times stated herein did business under the firm name of N. E. Daugherty Construction Company.

2. On April 14, 1943, defendant, acting through the Department of Commerce, Civil Aeronautics Administration, advertised for proposals for furnishing the materials and performing work required for the construction of grading, draining, paving and fencing of an airport at Zanesville, Ohio. The plaintiff, N. E. Daugherty, submitted a bid which was accepted on May 12, 1943, and on May 18, 1943, a contract, No. C3ca–2323, was entered into between Daugherty and the defendant, acting through O. J. Starr, Civil Aeronautics Administration Administrative Officer. The contract price was estimated to be $1,047,328.00. The accepted bid price included a unit price of 25 cents per cubic yard for grading and $1.35 per cubic yard for rock excavation.

3. On May 18, 1943, plaintiff Daugherty executed and delivered to the defendant payment and performance bonds both executed by plaintiffs, General Casualty Company and

Central Surety & Insurance Corporation, hereinafter referred to as the co-sureties, in the sum of $418,931.20 each, guaranteeing the satisfactory performance and completion of the contract.

4. Plaintiff Daugherty received notice from the defendant on May 27, 1943, to proceed with construction effective June 10, 1943. The project was to be completed within 150 calendar days thereafter. Daugherty began operations on June 17, 1943. On June 19, 1943, Daugherty assigned to LaSalle Industrial Finance Corporation all moneys due or to become due under the contract, as provided in the Assignment of Claims Act.

5. This suit arises out of the aforesaid contract and the petition is stated in two counts. Count One of the petition, a Lucas Act claim, was dismissed by the Court on January 8, 1952. Count Two is a contract claim covering the following items with adjusted sums sought:

Equipment rentals and expense	$13,283.97
Additional excavation	.00
Ditch rock excavation	13,395.00
Gravel processing plant	6,125.00
Overtime wages	2,959.85
Delay damages	4,337.91
Unpaid balance of contract price	57,813.37
Shale excavation	$167,540.40
Rock excation	238,430.50
	503,886.00

With exception of the item for additional excavation, which has been abandoned by the plaintiffs, the items above will be treated in the order listed.

EQUIPMENT RENTAL CLAIM

6. The proposal conditions stated in part, "The satisfactory completion of the proposed contract depends to a major extent upon the availability of proper equipment for construction purposes * * *". The specifications provided, as to equipment, in part as follows:

> 2.1 *General.* The Contractor shall maintain on the job sufficient equipment of the types needed to complete all the work in accordance with the requirements of this specification within the contract time. He may use any

> type of earth-moving equipment capable of accomplishing the specified and required results. * * *

Daugherty made strong but unsuccessful efforts to get sufficient equipment which was in working order. He fell behind in rental payments on some equipment which was then withdrawn from the job by the equipment owners. After numerous warnings that the contract would be terminated unless progress increased, it was finally necessary to terminate the right of Daugherty to proceed effective as of November 24, 1943.

7. The defendant, through the Civil Aeronautics Administration, accepted an offer of the co-sureties to undertake completion of the project by a letter of intent on November 29, 1943, reading, in part, as follows:

> This acceptance is contingent upon your proceeding with the construction with such diligence as will insure its completion within the time remaining under the contract. It is to be understood that any excess costs occasioned the Government because of delays in completing this project will be chargeable to the N. E. Daugherty Construction Company, as principal on the original contract, and to you as co-surety up to the limit of your bonded obligation.

On December 6, 1943, the co-sureties were given a notice to proceed in accordance with the letter of intent on all work remaining to be completed, the notice effective on December 7, 1943. Another notice, effective the same date, stopped all work except clearing, drainage, and fencing, until such time as a new notice to proceed should issue. Weather did not permit construction to proceed again until May 10, 1944, as hereafter noted.

8. In a letter on January 28, 1944, the contracting officer told the co-sureties that 52 calendar days remained to complete all work under the contract and that in order to accomplish the job it would be necessary for them to have sufficient equipment on the site by April 15, 1944, or sooner if weather conditions permitted, to operate on a full-scale basis. The co-sureties were requested to advise the defendant not later than March 1 what arrangements had been made to procure the necessary equipment and were instructed to list it. The threat was made that the last payment esti-

mate covering work performed by Daugherty would not be released until this was done and, further, that unless the defendant was satisfied with the answer of the co-sureties, their right to proceed would be terminated and the work given to others.

In a letter on February 26, 1944, the contracting officer stated no concrete evidence had yet been received that suitable arrangements had been or were being made by the co-sureties, but extended to March 15, 1944, the deadline for submission of the data requested in the letter of January 28. Thereafter, by telegram, the co-sureties were advised that the deadline had been moved back to March 10 and that, weather permitting, a proceed order might be issued effective March 15. A meeting with representatives of the co-sureties was set for March 11 in Chicago.

9. In the meantime, on March 7, 1944, the co-sureties furnished the defendant with the requested information, pointing out they had already invested almost half a million dollars in the enterprise and had every intention of completing the contract. They insisted the organization, finances, and equipment necessary for this purpose were available. At the conference in Chicago the defendant expressed further dissatisfaction, however, and informed the co-sureties that the commitments received for equipment did not appear to be either firm or adequate in amount. The co-sureties thereupon promised to get further equipment, made a prompt effort to do so and by March 21 had made substantial progress in that direction.

The co-sureties were moving equipment onto the site by the middle of March and had sufficient equipment there to resume full operations by April 1944. Normally, grading and excavation work could have started by about March 15 in that area but there was an abnormal amount of rain and freezing weather in March and April 1944 which made it necessary to postpone operations until May. The co-sureties were permitted to begin work on May 1 and the resume order was issued May 10, no time being charged against the co-sureties in the interval.

10. On February 17, 1945, the plaintiffs presented a claim to the contracting officer for $14,387.19 for machinery rentals

incurred prior to May 10, 1944. In the pending suit this sum is reduced to $13,283.97 because nothing is now claimed for the month of March, the rental expenditures being for the month of April and up to May 10, the date of the resume order. It is found that the sum claimed was spent and that it does not include any rental on equipment owned by Daugherty. The plaintiffs contend that they should have been permitted to secure the necessary equipment within a reasonable time after which a possible resumption date was apparent or determined. The plaintiffs, however, had no choice due to the fact defendant withheld a payment, threatened to cancel the right to proceed and in view of the further facts that plaintiffs had already spent several hundred thousand dollars in winter work and in cleaning up the Daugherty obligations.

11. The contracting officer denied the claim on June 4, 1945, stating:

> The lack of proper and sufficient equipment particularly during the latter stages of the construction influenced greatly our decision to terminate the prime contractor's right to proceed. Since the co-sureties had indicated that they intended to utilize the prime contractor's organization in the completion of the contract, we were concerned about the adequacy of the equipment to be furnished for this work. For this reason we corresponded and conferred with representatives of the sureties to insure that the completion of this project vital to the Armed services would not be delayed. Our primary purpose in these dealings was to ascertain that necessary equipment would be delivered to the site in time to permit the opening of construction as soon as weather conditions were favorable.
>
> Although weather conditions did not permit further construction until May 10, 1944, it is held that the Government is no more liable for the cost of the rental on equipment during this stand-by period than it is for rental costs on equipment held inactive by reason of unfavorable weather during the construction season. Your claim in the amount of $14,387.19 is, therefore, disallowed.

On June 16, 1945, plaintiffs appealed to the Administrator of Civil Aeronautics in Washington, D. C., and by letter of August 22, 1945, the Administrator ruled as follows:

> * * * At the time the sureties took over there was no

showing that they were in a position to resume operations with adequate equipment. The co-sureties had indicated their intention to utilize the prime contractor's organization in completing the contract and it is reasonable to assume that the Government would be concerned about the adequacy of the equipment to be furnished by the co-sureties for completing the work. Although weather conditions did not permit resumption of operations until May 10, 1944, it would not have been good business practice for the Government to have waited until that date to satisfy itself that the sureties were ready to begin as soon as weather permitted. The Government could not afford to defer enforcing the requirements of the contract but of necessity had to be certain that the sureties were in a position to resume operations with adequate equipment at the earliest possible date.

DITCH ROCK CLAIM

12. Plaintiff Daugherty subcontracted the drainage work for the airport to the Weikel Construction Company. The specifications in the prime contract provided, in part:

> 4.1 *General.* The unit prices bid for all items shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete work in accordance with the plans and specifications.
> 4.2 *Pipes and Storm Sewer Lines.* All pipe lines will be measured and paid for per lineal foot in place. Unit price shall include trench excavation, disposal of excavation material, and backfill, except granular backfill which will be paid for separately.

The profile drawings of the drainage structures showed them to be located in an area and in a strata of soil classified on the boring log as "Horizon C" material defined as "hard, impervious, silty clay" which was "relatively hard and impervious." In digging the trenches, rock was encountered which had to be blasted. It amounted to 2,679 cubic yards of sandstone and conglomerate. The subcontractor demanded payment for removal of rock at the rate of $8.00 per cubic yard. The co-sureties settled the claim for $13,395.00 which was computed at the rate of $5.00 per cubic yard. This was a fair and reasonable settlement. The prime contract had fixed a price of $1.50 per lineal foot of pipe in place. The uncontested evidence is, however, that the subcontract carried a provision identified by one of

plaintiff's principal witnesses, the purport of which was to protect the subcontractor against rock should it be encountered. The subcontract is not in evidence. It appears, however, from the weight of the evidence that rock was anticipated below grade on this part of the job. Blasting is ordinarily necessary because of the confined nature of this type of excavation, where hard materials are encountered and ditch digging equipment will not suffice. There is nothing in the evidence to disclose that plaintiff ever called the attention of the contracting officer to an alleged changed condition in connection with this portion of the work.

13. Plaintiffs filed a claim for recovery of the alleged cost of excavating this material on February 17, 1945. The contracting officer denied the claim on June 4, 1945, stating in part as follows:

> * * * While you found it necessary to blast to remove some of the material in drainage ditches, it is considered that from the information shown on the plans, such a contingency should have been anticipated and provided for. You will note that the borings shown on the log were all made down the center-line of the runways. Even at this point, considerably removed from the location of the underdrains, shale was shown to exist in some areas at the level of the drainage trenches. The profile drawings of the drainage structures showed them to be located over the majority of the airport area in the strata of soil classified on the boring log as "Horizon C" material and defined as "relatively hard and impervious". A reasonable interpretation of this definition should have put the bidder on notice that the material to be encountered was of such hardness as to require removal, in the confines of a narrow drainage ditch, by special methods other than with ordinary trenching machinery. The fact that blasting was resorted to does not justify a further allowance for the removal of this strata of impervious material since the price quoted per lineal foot for placing of the sewer pipes was to include all expenses incident thereto.

Plaintiffs appealed to the head of the Department who affirmed the decision of the contracting officer.

GRAVEL-PROCESSING PLANT CLAIM

14. The specifications provided for the uniform mix of base course materials in accordance with specification CAA 3SA–83a, which stated in part:

3.3 EQUIPMENT, *General.* The base course material shall be mixed by a travelling mixing machine or by a central mixing machine. The use of road mix will only be permitted when so provided in the proposal. All equipment must be in good working condition and approved by the Engineer. Whatever type of equipment is used must produce a uniform and well-pulverized mix. * * *

On April 24, 1943, a supplement to the above specification was issued modifying the provisions on road mixing. This supplement permitted such mixing of base course material, provided pulverizing-mixing methods and machines were used. A power-driven, rotary-type pulverizing machine that would be satisfactory was specified. However, the supplement went on to say—

> If the base course material is delivered to the runway in such uniform, mixed and pulverized state that no admixture will be required to meet the specified requirements, ordinary road mixing methods will be permitted for mixing in the water without the use of pulverizing-mixing machines.

15. Production of base course materials was started in the fall of 1943. Plaintiff Daugherty did not have any of the mixing plants listed in the specifications but was using a crushing plant at his gravel pit. The defendant tested the materials and on or about September 27, 1943, advised Daugherty that his method was not producing satisfactory results and would not meet specifications unless a central stabilizing plant was used. The fact is that some of the materials were satisfactory and were placed with defendant's permission to speed up the job although defendant felt that properly specified methods were not being used. Uniformity of mixture was achieved largely by road mixing, but without the specified pulverizing-mixing machine. Not enough satisfactory materials were being produced, however, without equipment listed in the specifications.

16. Plaintiff Daugherty brought a pug mill (usable as a central mixing plant) to the site in September but it was never placed in operation. When it became apparent the job would have to be finished the following spring, the plaintiff with defendant's consent and at its suggestion, com-

menced to stockpile base course materials after bad weather set in about October 23, although base course was placed occasionally thereafter. The effect of the stockpiling operation was to mix the materials and, assisted by winter snows and rains and by moving them a second time in the spring, a uniformity required by the specifications was achieved. As a consequence, the pug mill was never used. Stockpiling was not at the time contemplated by plaintiff as a substitute for methods listed in the specifications because it would have required double handling and it became an expedient method only because the construction season turned unfavorable before the work was finished. Such a method was not provided for in the contract. Had it not been used, however, plaintiff would have had to employ one of the methods contemplated by the specifications, demanded by defendant, and utilizing authorized machines.

17. On February 17, 1945, the plaintiffs filed a claim for the sum of $9,996.79, also named in their petition, contending that the pug mill was installed at defendant's insistence but was never necessary and that the said sum represented the cost thereof from which the contractor received no use or value. The contracting officer on June 4, 1945, denied the claim. The plaintiffs appealed to the head of the Department who, on August 22, 1945, affirmed the decision of the contracting officer, stating in part:

> It must be held that the installation of this plant was at the election of the contractor since the contract permitted the use of any one of several methods. It must be held that the contractor installed the central mixing plant in order that he might meet the requirements of the specifications. In any event, in the absence of a protest, which the contractor had a right to make under the contract provisions, it does not appear that there is any basis for a contention that the Government should bear the expense of such installation.

18. Plaintiff Daugherty owned the pug mill erected as heretofore noted and in this suit plaintiffs seek payment for its having been set up and dismantled under the circumstances described above. The evidence on plaintiffs' costs regarding this item is meagre but not incredible. It is found that the reasonable cost to plaintiffs was $6,125.00.

19. The special proposal conditions which were made a part of the contract provided in part as follows:

> 26. REGULATIONS RELATING TO OVERTIME WAGE COMPENSATIONS EXECUTIVE ORDER 9240: (a) On and after October 1, 1942, all of the requirements of Executive Order 9240, dated September 9, 1942, relating to Overtime Wage Compensation shall be observed by the contractor, during the war, in the performance of this contract, except insofar as it may be determined by the Secretary of Labor, pursuant to Executive Order 9248, that the provisions of Executive Order 9240 do not apply. The requirements of Executive Order 9240 are as follows:
>
> (1) No premium wage of extra compensation shall be paid to any employee in the United States, its territories or possessions for work on Saturday or Sunday except where such work is performed by the employee on the sixth or seventh day worked in his regularly scheduled workweek and as hereinafter provided.
>
> a. Where because of emergency conditions an employee is required to work for seven consecutive days in any regularly scheduled workweek a premium wage of double time compensation shall be paid for work on the seventh day.

20. On December 9, 1943, the project engineer called attention of the plaintiffs to the requirement of Executive Order 9240 as to payment of double time on the seventh day and of the heavy penalty for not doing so. A list of the names of 531 of those who should be so paid, in defendant's opinion, was provided plaintiffs.

On January 20, 1944, plaintiff Daugherty replied to the notice of December 9, 1943, stating that by agreement with the union the workers did not expect to be paid double time but that by paying time and a half for Saturdays and Sundays this amounted to straight time for Saturday and double time for Sunday. Defendant was asked to withdraw its demand that double time be paid for Sunday and assurance was given that while the arrangement made by plaintiffs "perhaps stretched some" the exacting letter of the contract, there was no intention to violate it, but only to expedite completion of the job in harmony with all concerned. The upshot of it was, however, that plaintiffs did pay $2,959.85

to satisfy demands of defendant that the Executive Order be complied with and this sum was over and above sums already paid.

21. On February 5, 1944, the contracting officer advised plaintiffs as follows:

> The Department of Labor has recently ruled in response to an application from this Administration, that the Wage Stabilization Agreement for the Building and Construction Trades Industry applies to all defense construction carried on by the CAA. Consequently, Executive Order No. 9240 is not applicable and we will not be required to insist on the observance of the provision regarding double-time compensation.

As a consequence of this exemption, plaintiffs, thereafter, were not required to pay double time.

22. On or about December 1, 1944, plaintiffs claimed reimbursement of the double-time compensation paid for work performed on the seventh day. The claim was rejected by the contracting officer and plaintiffs were notified on December 29, 1944, that this was so because the provisions of Executive Order 9240 were a part of the invitation for bids which resulted in the contract and that it must be assumed that the cost of compliance therewith was taken into account by Daugherty in preparation of his bid since no exception was taken to those provisions. It was pointed out that the order did not require payment for time and a half on Saturdays and defendant stated that the increased cost to plaintiffs was not due to the order but caused by the labor union's insistence that time and a half be paid for Saturday work.

23. An appeal was taken on January 25, 1945, to the head of the Department, as provided by the contract. On February 17, 1945, and again on June 4, 1945, the claim was the subject of further correspondence between plaintiffs and the contracting officer. On June 16, 1945, the appeal to the head of the Department was outlined in further detail and the argument made that the labor union at no time claimed double pay and was not responsible for these increased costs, otherwise the workers would not have accepted time and a half payment for the seventh day. On August 22, 1945,

the head of the Department affirmed the decision of the contracting officer for the same reasons given by the latter on December 29, 1944.

CLAIM FOR DELAY DAMAGES

24. Plaintiff Daugherty and defendant executed the standard Government construction contract containing Article 9 as follows:

> ARTICLE 9. *Delays—Damages.*—If the contractor refuses or fails to prosecute the work, or any separable part thereof, with such diligence as will insure its completion within the time specified in article 1, or any extension thereof, or fails to complete said work within such time, the Government may, by written notice to the contractor, terminate his right to proceed with the work or such part of the work as to which there has been delay. In such event the Government may take over the work and prosecute the same to completion, by contract or otherwise, and the contractor and his sureties shall be liable to the Government for any excess cost occasioned the Government thereby. If the contractor's right to proceed is so terminated, the Government may take possession of and utilize in completing the work such materials, appliances, and plan as may be on the site of the work and necessary therefor. If the Government does not terminate the right of the contractor to proceed, the contractor shall continue the work, in which event the actual damages for the delay will be impossible to determine and in lieu thereof the contractor shall pay to the Government as fixed, agreed, and liquidated damages for each calendar day of delay until the work is completed or accepted the amount as set forth in the specifications or accompanying papers and the contractor and his sureties shall be liable for the amount thereof: *Provided*, That the right of the contractor to proceed shall not be terminated or the contractor charged with liquidated damages because of any delays in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Government, acts of another contractor in the performance of a contract with the Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually sever weather or delays of subcontractors due to such causes, if the contractor shall within 10 days from the beginning of any such delay

(unless the contracting officer, with the approval of the head of the department or his duly authorized representative, shall grant a further period of time prior to the date of final settlement of the contract) notify the contracting officer in writing of the causes of delay, who shall ascertain the facts and the extent of the delay and extend the time for completing the work when in his judgment the findings of fact justify such an extension, and his findings of fact thereon shall be final and conclusive on the parties hereto, subject only to appeal, within 30 days, by the contractor to the head of the department concerned, whose decision on such appeal as to the facts of delay and the extension of time for completing the work shall be final and conclusive on the parties hereto.

25. As noted in finding 3, the contract entered into by plaintiff Daugherty was secured by substantial payment and performance bonds executed by plaintiff co-sureties. Upon termination of the right of Daugherty to proceed on November 24, 1943, the co-sureties assumed the burden of completing the contract, as noted in findings 6 and 7. No supplemental contract was made. It was thoroughly understood by the co-sureties and the defendant that the former would undertake to complete the job within the terms and provisions of the contract. However, Equalization Order No. 3–150 was issued giving the co-sureties 53 days from the date of the proceed order to complete the contract work.

26. Notice to proceed was issued May 10, 1944, and giving consideration to subsequent stop orders, the agreed period of completion was July 29, 1944. The co-sureties completed the work 33 days later, on August 31, 1944. As a consequence of this delay, defendant deducted $4,337.91 from money due on the final pay estimate pursuant to Article 9 of the contract.

27. On September 13, 1945, the co-sureties protested the deduction to the contracting officer upon the grounds that a large proportion of the excavated material was different from that shown by the plans and that this caused more time and expense to be required to move it. It was also alleged that defendant had made certain errors in staking the job and that there were substantial changes in the quantities of material and work to be done for which insufficient credit was given for additional time. The Comptroller General advised plaintiffs on August 28, 1946, that no action was

being taken on the protest other than to file the same. Plaintiffs filed their claim in this Court on September 9, 1946. The grounds raised in plaintiffs' protest and covered by the evidence are treated in subsequent findings, numbers 29 to 41, inclusive. Findings 6 to 11, inclusive, are also pertinent to this claim.

CLAIM FOR UNPAID BALANCE

28. On November 26, 1943, plaintiff Central Surety and Insurance Corporation sent the defendant a telegram stating that it was willing and, with defendant's permission, would jointly with General Casualty Company enter into a supplemental contract with the defendant for the completion of Contract C3ca-2323 in discharge of its bond obligation. On the same date the co-surety General Casualty Company also sent the defendant a telegram stating that on condition the right of Daugherty to proceed had been terminated and on the further condition that all estimates, retainages, extras, and other sums due would be paid direct to the co-sureties, the sender of the wire would undertake to discharge its bond obligation by completing the contract. The defendant replied to this wire on November 29, 1943, accepting the offer to go ahead but stating that claim to all estimates, retainages, extras, and other sums due under the contract at the time of termination could not then be allowed since there was, at the time of termination, a valid assignment of money due under the contract in favor of the LaSalle Industrial Finance Corporation. This was satisfactory to the co-sureties who then did go ahead without a supplemental contract. On January 28, 1944, the defendant advised them that when it was satisfactorily supplied certain information requested about equipment plaintiffs were lining up to do the job, the last payment estimate in question would be released. On July 3, 1944, under certificate No. 0838059 the Comptroller General certified as due the LaSalle Corporation, as assignee of Daugherty, the sum of $56,783.56, representing the sixth progress payment in controversy.

Before a check was issued, however, a tax levy was filed against the contractor. Plaintiff Daugherty owed withholding, victory and unemployment taxes assessed in the performance of the Zanesville contract in the sum of $45,366.00

and in the sum of $12,863.10 assessed in connection with other work. The defendant, thereupon, refused the demands of the co-sureties for payment of the amount earned by Daugherty prior to termination of the latter's right to proceed. On August 7, 1944, the certificate of July 3, 1944, was rewritten in favor of the Treasurer of the United States. By appropriate bookkeeping entries defendant set off the sum due Daugherty against Daugherty's tax indebtedness of $45,366.00, liquidating it entirely, and also by set-off reduced Daugherty's indebtedness of $12,863.10 by the sum of $11,417.56. Defendant took the position that by virtue of assignment the LaSalle Corporation, and subsequently the co-sureties, acquired by assignment whatever rights the contractor Daugherty had in moneys due or to become due under the contract but that the contractor could not transfer greater rights than he had himself and that as a matter of law all defenses and set-offs available to the Government, as debtor, against the contractor-assignor are available against the assignees. The defendant held that sums earned prior to termination were owed only to the contractor and that as these moneys were not earned by the completing sureties they could not claim the same for lack of consideration. Plaintiffs here seek the sum of $57,813.37 as representing earnings on account of performance of the contract. As between the sum claimed and that certified, the latter in the amount of $56,783.56 appears from the evidence to be correct.

CLAIM FOR SHALE AND ROCK

29. The specifications provided in part as follows:

> 3.1 *General.* * * *
> All material encountered shall be considered as unclassified excavation unless otherwise specified. The Contractor shall inform and satisfy himself as to the character, quantity and distribution of all material to be excavated. No payment will be made for any excavated material which is used for purposes other than those designated. * * *

The specifications provided further:

> 3.3–b *Classification of Excavation.* All excavated material will be classified as "Grading," or "Rock Excavation."

(1) *Grading* shall consist of the removal and satisfactory disposal of all loam, sand, clay, gravel, soft shale, soft slate, old gravel, broken stone or bituminous macadam pavements, loose or decomposed rock, boulders of less than one-half (½) cubic yard in volume and all other materials not otherwise classified under these specifications.

(2) *Rock Excavation.* Rock excavation shall include all solid rock and boulders having a volume of one-half (½) cubic yard or more, and all shale or ledge rock which cannot be removed with an extra heavy duty rooter powered with a crawler-type tractor having 110 drawbar horsepower in good condition and on firm footing, or a modern power shovel of three-fourths (¾) cubic yard capacity in good condition, without continuous drilling or blasting; although blasting may be resorted to, to facilitate the work. * * *

It is noted that in the contract, Item 1.21 of the Schedule of Items states the plaintiffs accepted unit bid price of 25 cents per cubic yard for grading and Item 1.22 gives the unit price of $1.35 per cubic yard for rock excavation.

The special proposal conditions provided in part as follows:

10. Local Conditions: Bidders or their authorized agents are expected to inspect the site of the work or to otherwise thoroughly acquaint themselves with local conditions as may affect performance of the contract and to reasonably anticipate the difficulties to be encountered therein.

11. Borings: Borings where shown were made by means of a hand auger. Borings were made at the approximate locations shown on the drawings, and the character and depth of materials found are believed to be approximately correct.

30. The contract provided in part as follows:

Article 3. *Changes.*—The contracting officer may at any time, by a written order, and without notice to the sureties, make changes in the drawings and/or specifications of this contract and within the general scope thereof. If such changes cause an increase or decrease in the amount due under this contract, or in the time required for its performance, an equitable adjustment shall be made and the contract shall be modified in writing accordingly. Any claim for adjustment under this article must be asserted within 10 days from the

date the change is ordered: *Provided, however*, That the contracting officer, if he determines that the facts justify such action, may receive and consider, and with the approval of the head of the department or his duly authorized representative, adjust any such claim asserted at any time prior to the date of final settlement of the contract. If the parties fail to agree upon the adjustment to be made the dispute shall be determined as provided in article 15 hereof. But nothing provided in this article shall excuse the contractor from proceeding with the prosecution of the work so changed.

ARTICLE 4. *Changed conditions.*—Should the contractor encounter, or the Government discover, during the progress of the work subsurface and/or latent conditions at the site materially differing from those shown on the drawings or indicated in the specifications, or unknown conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the plans and specifications, the attention of the contracting officer shall be called immediately to such conditions before they are disturbed. The contracting officer shall thereupon promptly investigate the conditions, and if he finds that they do so materially differ the contract shall, with the written approval of the head of the department or his duly authorized representative, be modified to provide for any increase or decrease of cost and/or difference in time resulting from such conditions.

* * * * *

ARTICLE 15. *Disputes.*—Except as otherwise specifically provided in this contract, all disputes concerning questions of fact arising under this contract shall be decided by the contracting officer subject to written appeal by the contractor within 30 days to the head of the department concerned or his duly authorized representative, whose decision shall be final and conclusive upon the parties thereto. In the meantime the contractor shall diligently proceed with the work as directed.

31. The site of the proposed airport was a rugged hilly country cut by deep ravines with ground elevations varying from elevation 870 to 917. In order to flatten out the site for airport purposes it was estimated that approximately 2,000,000 cubic yards of material would have to be moved. To assist bidders, the defendant made borings at intervals of 500 feet along the center line of the runways and notified the bidders that hand augers were used for this purpose.

Such augers bring up the earth in granular form. At stations 33 on the E-W runway and 38 on the NW-SE runway, intermediate borings were made between the regular intervals mentioned. All borings, 35 in number, were represented by defendant on sheets 12 and 13 of the contract drawings. The sections showing borings made on each runway are connected with horizon lines designated A, B, and C. The defendant's engineer making these hand auger borings found the soil to lie generally in three horizons as follows:

A. Brown topsoil, from zero to 6 inches in depth.

B. Yellow tan silty clay, 6 inches to 9 feet in depth.

C. Light tan silty clay and blue clay relatively impervious and hard from 9 feet in depth to grade.

The engineer reported, also, some evidence of shale and loose rock below grade. He connected the borings as shown on the drawings with lines he did not explain. The plaintiffs contend that these lines show that soil between the borings was identical with soil removed at the boring locations. The defendant did not adduce explanatory evidence from the author of the lines but denies the contention. Be that as it may, the charts and the borings did not show that plaintiffs would encounter hard shale as found in later excavation. Further, the borings made were apparently not all examined scientifically but only four samples thereof were submitted to the Flood Soils Laboratory for analysis. This fact was unknown to plaintiffs. The table of soils characteristics in the contract drawings was apparently based upon the laboratory report. Some soils described in the boring charts were found in the three horizons. It is found that the defendant did not deliberately misrepresent the materials it thought would be encountered or hold back any information it had from plaintiffs. It is found further, however, that its borings and data were inadequate and that plaintiffs encountered shale in locations and amounts seriously in excess of those indicated by the defendent's drawings. Also, hard shale not shown on the drawings was encountered. In these respects the contract drawings were not approximately correct. Plaintiff Daugherty's reasonably careful inspection of the site gave no indication to him that he would encounter materials any different from those represented on the contract drawings.

32. The plaintiffs and defendant are in agreement on the total quantity of excavation performed but not on what was excavated. The total quantity of excavated materials moved was 2,056,262 cubic yards. Sometime in July 1943 plaintiff Daugherty encountered hard shale. He concluded that it could best be removed by first breaking it up with a rooter. A rooter is a heavy blade which projects into the ground and operates on the principle of a plow. Daugherty's rooter had three teeth but after experimentation during the course of the contract it was found that in some areas the hard shale could more easily be rooted by removing two of the teeth, thus giving increased power to the operation. Thereafter, and until the winter layover, he used the rooter as occasion demanded. The rooter was powered by a crawler-type tractor having 110 drawbar horsepower. The hard shale could not have been removed by pans used in taking out clay without first rooting it. Considerable quantities of soft shale were also encountered. This was "grading" and was handled with the same equipment, pans and tractors as used on dirt.

33. The defendant classified the material, now claimed by the plaintiffs to have been hard shale and rock, as "grading" in each of the 1943 monthly estimates and plaintiff Daugherty was paid upon that basis. Daugherty, however, did protest orally in September 1943 to the resident engineer about such payment. The following month, in a letter to the engineer in charge of design and construction, he stated that 200,000 yards of hard shale had been encountered, slowing operations, but did not claim a changed condition for purposes of reclassification or payment. Previously, Daugherty's engineer and two successive superintendents made strong oral representations about a changed condition to defendant's resident engineer and his assistants and asked that payment be made for rock. This was refused upon the basis that it was being rooted and, therefore, was grading within the contract classifications. Plaintiff's engineer also told the resident engineer that he was going to cross section the hard materials and make claims for additional compensation therefor. The resident engineer was requested to cross section the materials also but declined to do so. Plaintiff asked the resident engineer to have repre-

sentatives present while plaintiff took elevations but he did not do so. The resident engineer did not report to the contracting officer the representations made by plaintiff Daugherty about the changed conditions encountered. On March 30, 1944, the resident engineer finally acknowledged to his superiors the fact that plaintiff was claiming rock. The first such claim was made by the contractor, in writing, on February 4, 1944. The claim under the latter date was after plaintiff retained counsel and was for 193,000 yards of rock alleged to have been excavated in 1943. The claim was denied February 10, 1944.

34. Plaintiff Daugherty had not excavated a shale bank near the runway intersection and when the work was resumed in 1944 the co-sureties contended that this shale constituted rock within the contract definition. The defendant's representatives suggested a rooter test with a crawler-type tractor having a drawbar pull of 110 horsepower or less but plaintiff co-sureties declined to make such a test. The rooter had been in operation and they took the position that the results of its operation were established.

It was agreed that a test would be made to see if the material could be handled by a three-quarter cubic yard shovel without continuous drilling or blasting. The test was made in May 1944. The shovel handled the materials with difficulty but was able to do so without drilling or blasting. The shovel did stick sometimes and it required several passes with the bucket to get a load, whereas in gravel, dirt, or clay this would not have been necessary. As a consequence of the test, defendant declined to pay for "rock." The plaintiff co-sureties then completed the contract and were paid for "grading." It is to be noted that plaintiffs did not rely solely on the three-quarter cubic yard shovel but also used a one-yard shovel which had more power, approximately twice the weight of the smaller shovel, and was more efficient. The material could have been moved with the smaller shovel alone without blasting, but this would have required much additional time which was not available. Even with the larger shovel the teeth would break off in the hard shale and both machines required considerable repair in this regard. This shale not only was hard to excavate and required more time

than clay but did not compact well and required more loads to the fills, increasing costs.

35. In finding 33 reference was made to the efforts of plaintiff to take cross sections as the excavation proceeded, showing the classifications and quantities of materials encountered. The information so gathered was used in preparing plaintiffs' exhibits 6 and 31 in evidence. These exhibits are colored and purport to show hard shale in green and ledge rock in red. The locations where shale and rock were claimed to have been encountered are further explained in plaintiffs' exhibit 7 in evidence. Plaintiffs also introduced into evidence samples of hard shale, what they called ledge rock, and numerous photographs taken during excavation and explained in relation to the cross sections. Following are the sums allowed and paid by the defendant on the disputed materials at 25 cents per cubic yard, the quantities and character of excavation claimed by plaintiffs and the sums claimed therefor:

	Cubic yards	Unit price	Total claimed	Allowed	Balance claimed
Hard shale	418,851	$0.65	$272,253.15	$104,712.75	$167,540.40
Ledge rock	216,755	1.35	292,619.25	54,188.75	238,430.50
	635,606	.....	564,872.40	158,901.50	405,970.90

If, as a matter of law, and as defendant insists, there can properly be no intermediate classification for shale between the price for grading at 25 cents per cubic yard and the contract price for rock at $1.35 per cubic yard, then the plaintiffs claim a total of 635,606 cubic yards at $1.35 per cubic yard, which would total $858,068.10. The defendant has allowed and paid as grading at 25 cents per cubic yard the sum of $158,901.50, leaving a balance claimed by plaintiffs of $699,166.60.

36. The 418,851 cubic yards of alleged hard shale are said by plaintiffs to have been removed by means of a rooter using three teeth, powered with a crawler-type tractor having 110 drawbar horsepower, after which pans were used. A fair and reasonable price for excavation of hard shale would be approximately 65 cents per cubic yard. The 216,755 cubic yards of ledge rock claimed to have been encountered by

plaintiffs could not be removed, the plaintiffs contend, by the rooter identified above and by the specifications nor by a modern power shovel with a three-quarter cubic yard capacity without continuous drilling or blasting. In order to accomplish removal of this material plaintiffs contend they found it necessary to use an extra heavy-duty rooter with only one tooth for greater rooting force. This rooter was powered by two D8, crawler-type, tractors having 110 drawbar horsepower, using one as a puller and the other as a pusher. Plaintiffs contend that such equipment went beyond the contract and specifications and was substituted for blasting of material that likewise was different from that defendant represented they would encounter. For this the plaintiffs here claim the contract rock price of $1.35 per cubic yard, a fair and reasonable price for rock excavation. Most of the alleged rock for which plaintiffs have not been paid the rock price, 185,804 cubic yards, was excavated in 1943 and only about 30,951 cubic yards in 1944. The quantity removed in 1944 was largely with the use of shovels heretofore noted. To the extent that pans were used this material had to be rooted. In addition to the 216,755 cubic yards of rock here claimed, plaintiffs encountered and removed 689 cubic yards of rock for which they were paid the bid price of $1.35. This small quantity of rock was found in a channel change and was loosened by blasting.

37. It is found that the 418,851 cubic yards of material plaintiffs claim was hard shale and which had to be rooted was not hard shale and that it was removed in part with the equipment plaintiffs admit using thereon, namely, a rooter with three teeth, powered by a crawler-type tractor having 110 drawbar horsepower, after which pans were used. There was no blasting. This material, while difficult of removal, was grading within the terms of the specifications, for which plaintiffs have been fully paid at the contract price for grading of 25 cents per cubic yard.

38. It is found that the 216,755 cubic yards of so-called ledge rock was in reality hard laminated shale of a type not shown on the contract drawings nor by the defendant's original borings.

In May 1944 when the work was almost completed, the defendant caused borings to be made by the H. C. Nutting

Company, a firm of soils experts. Out of some 17 borings three were made within the area where the plaintiffs contend they encountered shale and rock in excavation. On two of the three holes the material was hard enough to get core samples with a rotary core drill with diamond tools for cutting. On the other holes where the material was not hard enough to core, a sample tube was driven in with a No. 225 hammer using a three-inch stroke. In the three pertinent borings shale of various characteristics was encountered together with some conglomerate limestone.

If, as a matter of law, plaintiffs can be paid for 216,755 cubic yards of hard shale at 65 cents per cubic yard instead of $1.35 per cubic yard for rock, or 25 cents per cubic yard for grading, they would be entitled to $140,890.75 less the sum of $54,188.75 allowed by defendant, or a net of $86,702.00. Of this net amount the sum of $12,380.40 would represent the excavation of hard shale in 1944.

To excavate this material required the shovels heretofore discussed and sometimes a rooter with one tooth powered by two tractors, one pushing and one pulling. The evidence is conflicting on the exact extent to which two tractors were used on the rooter. The defendant's records on hours the rooter was used show only 67 hours of use in 1943. It is found that these records are not complete and that while two tractors were not used continuously and the rooter or rooters were employed intermittently as required, the hard shale in the quantity of 216,755 cubic yards could not, for the most part, have been removed in any efficient manner without a one-yard shovel supplementing the three-quarter yard shovel and by being loosened in some areas with a single-tooth rooter powered by two tractors. As with the case of the three-quarter cubic yard shovel, the job could have been completed with a rooter powered by only one tractor such as specified but it would have taken "forever and a day." Under the specifications the plaintiffs were entitled to use any excavating equipment they desired to use, and were required to have such equipment as necessary to complete the contract in time, as noted in finding 6. In using two tractors to power a one-tooth rooter the plaintiffs did so in lieu of blasting. Plaintiffs did not have and were unable to obtain

equipment and supplies required for extensive drilling and blasting.

39. Plaintiffs' records are not sufficiently complete to make possible an accurate audit of actual costs. Nevertheless, the defendant attempted a calculation involving both audits of records and estimates, concerning costs for excavation which, for the total quantity excavated, resulted in a unit cost of 38.9 cents per cubic yard. If certain items which the defendant disallowed and which are claimed in this suit are included, the unit cost would appear to be about 44.56 cents per cubic yard for excavation. Approximate over-all cost at the rate of 39 cents per cubic yard was in no small measure due to plaintiffs' slack production, heretofore referred to and which eventuated in the termination of his contract rights.

In the completion of the project, the co-sureties expended the sum of $1,584,942.27, of which $487,882.90 was a loss. The co-sureties have paid up to December 31, 1951, a total of $493,991.64, which is the sum claimed by them of any judgment rendered herein.

40. Plaintiffs filed a claim for rock and shale excavation on February 17, 1945. The contracting officer denied the claim on June 4, 1945, stating, in part, as follows:

> In comparing the areas in which you claim to have encountered rock with the information shown on the monthly progress reports, it is found that considerable areas in which this more difficult excavation is claimed to have been performed were excavated during the 1943 season. There is not sufficient evidence to give consideration to any part of the claim bearing on the work in 1943. From a daily inspection of the performance, the Government did not at any time consider that the conditions being encountered differed materially from those shown on the plan. The evidence on file does not indicate that the contractor was of the different opinion as to the class of the material being excavated. While on several occasions letters were directed to the Government's project engineer concerning a controversy in the interpretation of the specifications, in no instance did the contractor take exception to the soil classifications as indicated by the plans and specifications. It was not until February 4, 1944, several months after his right to proceed had been terminated, that the prime contractor came forth with a claim for the excavation of rock. In view of his prior tacit acceptance of the

terms of the contract, the accuracy of the claimed difficulties could not at this late date be determined. If the contractor intended to claim additional compensation, these alleged changed conditions should have been made a matter of record before these conditions were disturbed as contemplated by the contract so that an investigation could then and there have been made.

The fact that the contracting officer was deprived of his prerogative of examining the conditions prevents the acceptance of your argument that the character of the soil was entirely different from that represented by the plans. After the receipt of the letter of February 4, 1944, and after work was resumed in 1944, an investigation of the soil conditions was instituted so that it could be determined whether, in the areas remaining to be excavated during the 1944 season, the completing sureties would encounter material falling within the classification for rock in the specifications. As you are aware, representatives of this office were present on May 19 and 20, 1944, for an on-the-job demonstration of the difficulties attendant to the prosecution of this work. The primary purpose of this demonstration was to determine whether the soil remaining to be excavated would fall under the classification for grading or rock excavation. * * *

For the purpose of this demonstration you provided a three-fourths cubic yard power shovel and performed some excavation in the face of a bank of shale which had not previously been disturbed. The results of this showing did not prove that the material encountered met the provisions of the specifications with respect to rock excavation since it was possible to remove the materials without undue difficulty. Insofar as is known to this office all of the material for which payment has been made under item 1.21 of the contract was removed with equipment which is generally used for unclassified excavation, and with the exception of 689 cubic yards of rock removed from a channel 380 feet left of the centerline at station 10+00 on the NW.-SE. runway, blasting was not resorted to in any of the grading operations. Your claim for compensation for the excavation of rock over and above the quantity of 689 cubic yards for which payment has been made is, therefore, denied.

The statements made concerning your claims for rock excavation in the areas graded during 1943 apply as well to your claim of 65 cents per cubic yard for excavating 423,168 cubic yards of shale. Apparently the bulk of the material you claim as shale encountered during 1944 construction was classified on drawings Nos. 3-X-1276-

9A and 3-X-1276-9B as hard impervious silty clay and occurred above the elevations where shale was shown. This material, to the knowledge of this office was all excavated with ordinary grading equipment without greater difficulty than should have been anticipated from an analysis of the specifications and an investigation of local conditions. The conditions encountered were peculiar to the locality and were not so materially different from those shown on the plans as to justify a further allowance for excavation.

41. Plaintiffs appealed to the head of the department who, on August 22, 1945, reviewed the decision of the contracting officer and denied the claim stating, in part, as follows:

> On the basis of the evidence developed and after careful consideration of the statements contained in your appeal, I find that the decisions rendered by the contracting officer in this case were proper and must therefore be sustained. Accordingly, it is hereby determined that there is no basis for the payment of any additional compensation in connection with any item of your claim.
> Item 1 of your claim deals with the excavation of rock and shale and is based on your contention that the plans and drawings forming a part of the contract did not accurately describe the conditions actually encountered. Notwithstanding the merit of your argument, I do not believe that such contention has any bearing on the matter at issue. * * *
> * * * the contract provides for two types of excavation—unclassified excavation at 25 cents per cubic yard, and rock excavation at $1.35 per cubic yard. It is mutually agreed that no drilling or blasting was resorted to in performing the excavation with the exception of 689 cubic yards for which you have been or will be paid at the contract price of $1.35 per cubic yard.
> In effect, your argument with respect to this item of the claim attempts to set forth a third classification for excavation to provide for an intermediate price between that provided for unclassified excavation and that provided for rock excavation to take care of the material which you claim was removed under great difficulty both in time and expense and delay in progress, although such material did not require drilling or blasting.
> I can see no basis for such a revision of the contract. The contract is clear and specific with respect to the two types of excavation and inasmuch as the material removed did not fall within the definition of "Rock Excavation" as set forth by the contract, there is no

authority for classifying such material as rock or for paying for its removal at any price in excess of the 25 cents per cubic yard specified by the contract for unclassified excavation.

42. When the contracting officer and the head of the department denied and failed to recognize a changed condition as described in these findings where plaintiff encountered 216,755 cubic yards of hard shale which was not indicated in the borings and contract drawings, and which was more difficult of removal than grading, and when said officers failed to make an equitable adjustment for removal thereof, the determination was arbitrary and was not supported by substantial evidence.

DEFENDANT'S COUNTERCLAIM

43. Daugherty rented equipment and received property from the Maxon Construction Company, becoming indebted thereby in the sum of $875.32. The Maxon Construction Company assigned its claim to defendant. Daugherty is indebted to defendant in the sum of $875.32.

CONCLUSION OF LAW*

Upon the foregoing findings of fact, which are made a part of the judgment herein, the court concludes that as a matter of law plaintiffs General Casualty Company of America and Central Surety and Insurance Corporation are entitled to recover, and it is therefore adjudged and ordered that they recover of and from the United States as reimbursement for sums expended for and in behalf of N. E. Daugherty, d/b/a N. E. Daugherty Construction Company, the sum of $91,039.91 less $875.32, representing defendant's counterclaim, making a total of ninety thousand one hundred sixty-four dollars and fifty-nine cents ($90,164.59).

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*As amended by order of the court dated February 16, 1955.

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